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Table of Contents

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ORIGINAL ARTICLES—

"Chronic Ulcer of the Leg," by FAY MACLURE, O.B.E., F.R.C.S.	29
"The Treatment of Cancer by Low Grade Heat," by D. KELLY, M.B., B.S.	34
"Some Experiences with Gullstrand's Slit Lamp," by J. F. SPRING, M.D., Ch.B.	36

REVIEWS—

A Book of Verse	38
Slit-Lamp Microscopy	39
Modern Treatment	39
A Practical Manual for Workers in Pathology	39
Ophthalmic Plastic Surgery	40
Medical Museums	40
A Food Manual for Diabetics	40

LEADING ARTICLES—

A Retrospect	41
------------------------	----

ABSTRACTS FROM CURRENT MEDICAL LITERATURE—

Pædiatrics	46
Orthopædic Surgery	47

BRITISH MEDICAL ASSOCIATION NEWS—

Scientific	48
----------------------	----

CORRESPONDENCE—

Indications for Interference During Pregnancy	53
---	----

PROCEEDINGS OF THE AUSTRALIAN MEDICAL BOARDS—

New South Wales	53
---------------------------	----

NEW YEAR'S HONOURS.. . . .

	53
--	----

OBITUARY—

George Read	54
-----------------------	----

THE MEDICAL JOURNAL OF AUSTRALIA

	54
--	----

JOHN IRVINE HUNTER MEMORIAL FUND

	54
--	----

MEDICAL APPOINTMENTS

	54
--	----

MEDICAL APPOINTMENTS VACANT, ETC.

	54
--	----

MEDICAL APPOINTMENTS: IMPORTANT NOTICE

	54
--	----

DIARY FOR THE MONTH

	54
--	----

EDITORIAL NOTICES

	54
--	----

CHRONIC ULCER OF THE LEG.¹

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It is not possible within the space of time allotted to discuss chronic ulceration of the leg in all its aspects. It is therefore proposed to consider more fully the varicose ulcer and its allies, those chronic ulcers which are the result of superficial sepsis, wounds or burns or of nervous lesions.

It is the purpose of this paper to attempt to establish on clinical grounds alone that the cause of the chronicity of these ulcers is a failure of the venous and lymphatic circulation, or in other words, a stasis of the blood and lymph, and on this basis to found a method of treatment directed towards the restoration of circulation and to describe the several means by which this objective is to be attained.

Anatomy.

From a circulatory standpoint the structures of the leg may be regarded as being contained within two zones, an inner or central, separated by the dividing line of deep fascia from a superficial or

outer zone. The central zone contains the bones, muscles and main vessels confined within a fibrous sheath, the deep fascia. The outer zone contains subcutaneous tissues and fat and numerous veins and lymphatics enclosed within the envelope of skin. The inelastic deep fascia forms a cylinder open at its proximal and closed at its distal end. The skin forms a similar cylinder enclosing the other. Within the central zone the circulation is chiefly arterial, in the superficial zone chiefly venous and lymphatic.

Arterial Circulation.

The primary activating agent in the circulatory mechanism of the leg is arterial pressure. There are several contributing factors, but in the end on this force depends the return flow of the venous blood and lymph.

Some idea of the magnitude of this force may be gained by witnessing a sudden secondary hæmorrhage from an exposed femoral artery or by trying to compress with the thumb the femoral artery so as to obliterate the tibial pulse for a short time. Again in the case of fracture it not infrequently happens that there is severe bleeding into the tissues so that the limb becomes tightly distended, great blebs appear on the surface and the skin seems about to burst. In this connexion it is of interest

¹ Read at a meeting of the Victorian Branch of the British Medical Association on October 7, 1925.

to consider if it is possible for this tension to rise to such a degree as to equal the arterial pressure and so to diminish the blood supply to the parts distal to the fracture and bring about a condition of Volkmann's ischæmic paralysis in the complete absence of encircling bandages or of malposition.

The arterial force may be seriously diminished in conditions such as endarteritis and in femoral and popliteal aneurysm. Here there is usually found discoloration and œdema of the superficial tissues of the leg and foot when in the dependent position, indicative of the failure of the returning circulation to overcome the opposing force of gravity.

This suggests that when the arterial circulation is slowly obstructed wet gangrene will occur, whilst in the case of sudden and complete blockage, as by embolus, dry gangrene will be the result.

Elasticity.

The latent power of the cardiac impulse in the extremities is converted into a force which impels the venous and lymphatic fluids on their heartward journey. The conversion is dependent on the elastic recoil of the body tissues; the arterial thrust distends the tissues; their elasticity generates a rebounding force which, displacing venous blood and lymph and assisted by valves, maintains the return flow of these fluids.

The elastic properties of tissues are best expressed by the term tone which implies health, pink coloration, activity, resiliency.

In the atonic limb the tissues exist—they do not live. The circulation is sluggish; there is a condition of stasis evidenced by duskeness and œdema; the reparative powers are below par and the resistance to infection is seriously impaired.

It is wise to defer operation upon such a limb, as for example, in bone grafting an ununited fracture, until tone has been restored by a course of massage, active movements and exercise.

Elasticity is most noticeable in youth and diminishes with age. Varicose ulcer is rarely seen in the growing period of life. The youngest sufferer the writer has seen was aged sixteen years, but an extreme degree of varicosity outweighed all other factors in the causation.

Atony appears as the result of disuse. When a patient with a fracture of the lower limb first leaves bed, his leg becomes swollen and blue and this occurs no matter where the fracture has been, whether ankle, leg or thigh. It is present to a smaller degree in the other leg which has been freely used and to a considerable extent may be obviated by massage and active movements during the period of splint treatment—the keynote of Lucas Championnière's method of mobilization and massage—which maintains an efficient circulation, keeps the reparative processes at their maximum point and stimulates union.

The elasticity of the tissues within the central zone of the leg is owing chiefly to the large muscle mass much greater than that in the outer zone. The efficiency of the circulation is consequently much higher within the deep fascia than outside

it. As a result of this the varicose ulcer never invades the deep fascia. No matter how deep the ulcer, how extensive it may be nor how long it may have been in existence, bone, tendon, muscle are never exposed. This is one of the prominent features of chronic ulcer of the leg.

Circulatory Repercussion.

The closed cylinder of deep fascia and that of the skin may each be likened to the barrel of a syringe, the arterial pressure to its piston.

When the piston is thrust into the closed barrel and then let go, it rebounds. So when arterial pressure exerts its thrust within the closed cylinder of deep fascia and of skin, it exerts a repercussive effect upon the venous blood and lymph and empties these out on their homeward journey.

When, however, the piston is pushed into the barrel with the nozzle open, there is absence of rebound effect. So, too, when the integrity of deep fascia or of skin is destroyed, arterial pressure is dissipated, its effect upon the return flow is lost and stasis of blood and lymph occurs over a corresponding area.

In illustration of this point may be quoted the cases of guillotine amputation performed during the war. The face of these stumps presented a swollen, pale grey, succulent appearance and oozed quantities of sero-pus. Healing was slow, extremely slow, extending over many weeks and frequently over many months. But when stump tractors were used and the skin was pulled down over the face of the stump in an attempt to close its open end, healing became much more rapid. The effect of this treatment was by pressure to counteract the stasis of blood and lymph and to reduce the œdema, to restore tone to the infiltrated inelastic muscle mass and by closing the open cylinder to allow the arterial thrust to exert its beneficial action on the venous circulation and thus generally to bring about a more normal state of the circulatory mechanism.

Had it been possible to devise a venous pump, an apparatus which would have exerted upon the tissues of the stump an action similar to the heart's action, it was thought by the writer that these œdematous amputations would have healed in one-quarter of the usual time.

When a breach occurs in the skin cylinder, a similar condition is set up. Disorder of the circulation in the area occurs, stasis of blood and lymph follows and chronic ulcer results.

The simplest form of chronic ulcer is that œdematous mass of granulation tissues popularly known as "proud flesh." It is commonly treated by "burning it down" with the caustic stick.

If a large area of granulation tissue is touched at various points with silver nitrate and copper sulphate which are the common caustics, with zinc sulphate the active agent in *lotio rubra*, with aluminium acetate (a favourite remedy for ulcerating lesions), with zinc chloride which is a useful stimulant to chronic septic processes, with chromic acid which is used for touching ulcers of the tongue

and mouth, and with alcohol which is commonly used as a dressing for burns, the end results are much the same in all. Each area so treated becomes reduced in size and depressed, the œdema disappears from it and it becomes less pale, more pink and it proceeds to follow the normal course of healing.

All of these substances have one property in common—that of coagulating protein. On the granulation tissue they produce a film of coagulated serum, a resistant layer or membrane against which the arterial thrust can generate a rebounding force and so restore the enfeebled circulation. Immediately the œdema disappears, the area shrinks in size, a healthier colour appears and healing progresses.

A similar effect can be produced by the application of elastic pressure. For example in the case of a large granulating area the result of burns of the thigh, if the limb be encircled by a broad band of thin sheet rubber—dental rubber dam—it will be found that the granulations will be depressed over the area corresponding to the pressure.

Again in Thiersch skin grafting isolated areas of a large ulcer it is very disconcerting to find the rolled up sloughs of the transplants at the first dressing. Closer inspection, however, discloses depressed areas which are dry, not weeping like the remainder of the ulcer. Over these areas a thin layer of epithelium, so thin as to be transparent, has formed a resistant membrane which has restored the circulation and overcome the œdema.

Muscular Movements.

Muscular movements play an important part in the venous circulation.

With each contraction of the leg muscles the pressure within the central zone is raised and venous blood is expelled upwards along the deep veins and outwards through the communicating veins to the venous system of the superficial zone. Each muscular contraction thus hastens the flow of the venous blood stream in the superficial tissues.

The practical application of this fact is to be seen in the operations of bleeding and of blood transfusion. In the latter case the venous system of the forearm of the donor is obstructed by constriction of the upper arm. A needle is inserted into a vein of the forearm, its point being directed against the stream. The donor is then instructed to close and open the hand slowly and strongly at regular intervals. With each muscular contraction there is a rush of blood from the needle and by this means blood is much more rapidly collected than if merely allowed to drip from the needle.

In the absence of muscular contractions, as for example in infantile paralysis and in lesions of the sciatic nerve, this accessory force is lost to the venous circulation and consequently patients suffering from such conditions are apt to manifest blueness of the limb and are liable to ulceration.

Still another effect—and this perhaps most important of all in that it affords an explanation of some outstanding features of varicose ulcer—is produced by muscular movements.

With each rise of tendon and of muscle belly corresponding to the muscular contraction pressure is transmitted to the tissues of the superficial zone overlying them and venous blood and lymph are consequently expelled from this area.

It is obvious that this effect will be greatest where the range of movement is most wide, that is over the upper half of the leg; it will be less over the area corresponding to the tendons and will be least over the bones.

Varicose ulcer occurs where stasis is most pronounced. Consequently and as a matter of experience, its favourite site is found to be over the lower end of the tibia. Next in order of frequency it is situated over the external malleolus; it never originates over the tendinous area. When it extends from its original site, it does so circumferentially, invades the area which is next less movable, that is the tendinous area and so in its completed form ringbarks the leg in its lower third.

Except under exceptional circumstances to be referred to later the complete varicose ulcer never advances into the upper half of the leg nor into the foot.

Another example in this connexion is to be found in amputations of the leg. Where it is necessary to remove the foot the natural thing to do is to save as much of the leg as possible and to amputate in the lower third. Such a stump is very frequently troublesome; it is always cold and blue and is very liable to recurrent ulceration which is slow to heal, and this for the same reasons as have been adduced as the cause of varicose ulcer. From the artificial limb-maker's point of view a stump of fifteen centimetres (six inches) in length is as suitable as one through the lower third. So surgeons have been obliged in view of the unhappy after results to discard the latter amputation in favour of a stump at the muscle level.

Gravity.

If a limb be raised above the cardiac level, the effect of gravity upon its lymphatic and venous circulation is to assist it to hasten the return flow of these fluids. The horizontal level of the healthy arm during the day's work is continually being changed and in consequence the harmful effects of gravity are not seen.

But in the case of an arm fixed to the side in the dependent position the strain upon the circulation soon becomes manifest; witness the general blueness and œdema of the hand and forearm following a prolonged treatment of whitlow of a finger or of fracture or arthritis.

The lower limb is continuously dependent throughout the day. The burden of gravity upon the venous and lymphatic vessels is constant. Whilst the valves remain competent, the circulatory mechanism is equal to the strain. When once this competency fails, gravity manifests its effects in stasis, engorgement and œdema in the lower leg. The tissues of the superficial zone are principally involved, because the pump-like action of the muscles within the

central zone are capable of maintaining an efficient venous circulation.

One result of the breakdown in venous circulation is a rise in intravenous pressure in the leg. This in turn throws a greater strain upon the walls of newly formed vessels, upon the budding capillaries and lymphatics of granulation tissue. The following facts may be cited in illustration of this point. If in the case of a leg ulcer which has been treated by means to be described hereafter, the limb is allowed to hang down and the supports to the ulcer are removed, the ulcer which was previously pink, healthy and flat, becomes in the course of a few moments blue, engorged, swollen, exudes serum and frequently weeps blood.

If the process is ended by raising the leg numerous petechiæ will be seen dotted over the ulcer. These are minute hæmatomata, they must seriously interfere with healing and they cause staining and pigmentation of the tissues.

The lesson to be learned from these observations is that every ulcer should be supported by external pressure when the leg is in the dependent position.

Femoral Thrombosis.

The most serious obstruction to the venous return is produced by femoral thrombosis. Legs so affected become larger than their fellows. It is probable that the increase in size is wholly confined to the superficial tissues. In some cases the swelling is firm and consists of an infiltration of the tissues, a state of chronic œdema. In other cases, however, it is soft and is due to a dilatation of the whole of the venous system of the outer zone, the subcutaneous tissue being in effect an extensive cavernous angioma.

The incidence of varicose ulcer on femoral thrombosis is greater than on any other ætiological factor and this lesion is the most frequent cause of varicose ulcer in the male.

As femoral thrombosis overshadows all other conditions leading to venous stasis, so the ulcers which arise in its course, depart from the usual characteristics of varicose ulcer. Thus in addition to the ordinary sites such ulcers may arise in other parts, on the upper part of the leg over the muscle areas and particularly along the shaft of the tibia. They are more resistant to treatment because of the greater difficulty in controlling the cause. Because of the higher intravenous pressure they require greater external pressure for their cure and they are frequently associated with hæmorrhages and staining of wide areas of skin.

Characteristics of Ulcer.

According to whether the stasis of blood or of lymph is the greater, so blue or white ulcers occur. The blue ulcer is more acute, flatter, more apt to be painful and associated with surrounding redness and it bleeds more readily. The white ulcer is usually of longer standing and there seems to be a greater amount of fibrous tissue. Its edges are raised, thickened, almost cartilaginous, its sides

steep, its base pale yellow exuding serum. It is very resistant to treatment and requires great external pressure for its cure.

The site has been shown to be largely dependent on the absence of movements of the parts. Hence by far the most common site is over the lower portion of the subcutaneous border of the tibia. Less commonly ulcer may arise over the external malleolus. The ulcer may remain at or about the same size for months or even years. When it extends it does so circumferentially and eventually ringbarks the leg in the lower third.

The ulcer rarely arises in the upper half of the leg and then only as the result of an extreme degree of varicosity or of femoral thrombosis. When all movements of muscles are lost as in paralysis, ulcers may occur in any part.

In patients in whom the network of very small and superficial veins is dilated—the blue foot—ulceration may occur in the depression behind and below the internal malleolus. This ulcer is always very painful, very tender, very blue and is always small, rarely larger than a split pea.

Varicose ulcer is always associated with a discharge from its surface. This is not to be regarded as a harmful fluid, but as an expression of the fact that a perforation of the cylinder containing the tissue fluids has taken place and that these tissue fluids are leaking through. The discharge is the result of a passive filtration, not of an active secretion. The ulcer is therefore not to be looked upon as a septic area to be treated by fomentations and by antiseptic lotions and ointments, but is to have pressure applied to it so as to stop the leak.

Treatment.

Treatment consists of means directed towards the restoration of the venous and lymphatic circulation.

Recumbency.

The simplest and most obvious method is to treat the patient in the recumbent position with the leg raised so that gravity will be assisting instead of impeding the circulation. But the elevation must be absolutely continuous. In the treatment of paralysed muscles by relaxation it has been well said that five minutes of stretching will nullify the value of a week of relaxation. So too here a few moments of hanging in the dependent position will undo the work of a week's elevation—the healing ulcer becomes engorged, œdematous, hæmorrhagic and healing is delayed.

This method, although very valuable, is exceedingly irksome and uneconomical and for the great majority of patients some other means must be adopted which will allow the patient to carry out her home duties. Therefore the harmful effect of gravity has to be accepted and efforts concentrated on counteracting and outweighing it by applying to the fluids of the superficial zone a pump-like force which will overcome the obstruction.

Two sources of energy are at disposal, the latent energy of the arterial pressure and the energy

developed by the contraction of the muscles. By ensheathing the leg or the particular area involved with an elastic material the energy of each may be converted into a pump-like force, the one regular and synchronous with the heart beat, the other irregular and synchronous with the muscle movements.

Such a force is capable of pumping the blood and lymph onwards and thus of relieving the stasis. Once the stasis is relieved, the natural processes of repair come into operation and healing occurs.

For the ulcer which does not heal because of a local breakdown of circulation—the acute traumatic ulcer, the shin scrape—a simple and efficient method is to draw the edges together and to cover the ulcer completely with strips of adhesive plaster applied across the long axis of the limb. The most generally useful method consists in encasing the whole of the leg in a closely fitting semielastic case, the Unna stocking.

Unna's Leg Case.

The materials required for Unna's leg case are Unna's paste which is made of gelatine, glycerine, zinc oxide and water, finely woven gauze bandages 7.5 centimetres (three inches) in width and a firm shaving brush.

The paste is melted on a water bath, the ulcer protected by a zinc cream covered piece of lint cut to size, and the whole leg is rapidly painted with the fluid paste.

A turn of the bandage is made around the foot and is then continued, making firm and even pressure, up the leg to the knee.

The object is to make an accurately fitting case of the elastic paste, reinforced by the woven cotton of the gauze bandage. The latter is not to be used in the usual manner of a surgical dressing. It is not made into reverses and figures of eight. Instead it must firmly encircle the limb so that never is one edge of the bandage at greater tension than the other. When the bandage has reached the knee it is cut, a fresh start is made at some uncovered part of the leg and continued as before. Paste is painted on to the bare cotton so as to impregnate it and bind it to the succeeding layers. The process is continued until three or four layers have been applied, greater pressure being made over the ulcerated area than above it.

The case is left in position for a week, the patient meanwhile carrying on her usual work. It is then cut down and a fresh case applied.

Ulcers up to the size of 25.8 square centimetres (four square inches) require on an average eight weekly applications. The time necessary will be longer in the case of ulcers with very thick and hard edges and in those due to femoral thrombosis.

Errors in technique are: (i.) Insufficient tension so that fluids are not emptied out of the superficial tissues; (ii.) irregular pressure by reversing bandage and so forth, so that a garter effect is produced; (iii.) cutting windows in the case over the site of the ulcer to allow of dressing.

If the supporting case is discarded immediately the ulcer is healed, stasis is apt to recur over the site which becomes oedematous, and the weak scar breaks down. It is wise, therefore, to reapply the case for a further two weeks and in the meantime to have the patient's leg measured for a woven silk elastic stocking which should be worn and renewed at the end of six months.

Such a method of treatment suffices for the generality of ulcers where the site is on the prominent portion of the circumference of the leg. But it is obvious that when the ulcer occurs in the depressions behind and below the malleoli, the encircling bandage will jump from point to point and pressure will not be applied to the area where it is most needed.

For these cases two means of applying elastic pressure are used, rubber sponges and rubber balloons.

Rubber Sponges.

A portion of the convexity of a small rubber toilet sponge is cut off, sufficient in size to fill the depression in which the ulcer is situated. The remainder of the sponge is applied over this and the environs and is bandaged in place with pressure sufficient partially to empty the area of stagnant blood or is used under cover of an elastic stocking.

Balloons.

The toy balloon of the street seller or ballroom is, before it is overstretched by full inflation, filled with one or two ounces of water and its neck tied with tape. Thus treated it presents an elastic cushion which when pressed upon covers an area of seven and a half by five centimetres (three inches by two). This cushion can be bandaged on to the retromalleolar sulci or on to the crest of the heel or the hollows of the instep. Ulcers situated in these areas will frequently manifest definite improvement in the course of a few days of such treatment, if continuously supported and pressed by a balloon applied as described above, even in the absence of muscular movements as, for example, when the patient is confined to bed.

Rubber Bands.

The writer's experience of ulcers of the foot, the result of nerve lesions, is not large, but such as it is it would seem to justify the hope that these ulcers can be cured by the application of the principle of elastic pressure.

For these perforating ulcers of the sole, ulcers about the big toe and the fore part of the foot and on the site of bunions a useful means of applying pressure is to cut off the wristlet of a surgical rubber glove, so that a band some seven and a half or five centimetres in width is formed and to slip this over the fore part of the foot so that it completely covers the affected area. The patient is encouraged to walk and use the foot, so as to add an increased intermittent pressure to the continuous elastic pressure acting on the ulcer and the surrounding tissues.

THE TREATMENT OF CANCER BY LOW GRADE HEAT.

By Dr. KELLY, M.B., B.S.,
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 Sydney.*

DURING a recent visit to California I availed myself of the opportunity of visiting the cancer clinic of Dr. J. F. Percy, of Los Angeles, and formerly of Galesburg, Illinois. The work at the clinic was so interesting that not only did I spend some time with Dr. Percy and his associates, but I returned to Los Angeles some weeks later to observe the results of the previous treatment and to see Percy operate on some neck and rectal cancers which he had collected in the meantime.

Most surgeons are familiar with the writings of Percy during the last twenty years and also with those of Byrne, of Brooklyn, who preceded him in this method of treatment.

To see Percy manipulating the thermocautery is a revelation and his skill in dissection with the hot iron is equal to that of most of us who use only the cold steel scalpel. It must be understood that Percy does not attribute his results to the thermocautery as a cutting instrument, but to its action in the destruction of cancer cells with which the iron comes in direct contact, and also to the destruction of the cancer cells some distance from the point of actual contact by heat conduction. Many laboratory experiments have shown that a degree of heat varying from 44.4° to 48.8° C. (112° to 120° F.) applied for some time will destroy cancer and other malignant cells, whilst temperatures of 54.4° C. (130° F.) and even more are not fatal to the life of the ordinary body cells. A temperature of 42.5° C. (108.5° F.) is fatal to certain types of sarcoma cells. This being so, it is not too much to assume that the results reported from the treatment of sarcoma by the injection of Coley's fluid may have been due to this heat action and not to any specific action of the fluid itself. I have seen a temperature of 43.3° C. (110° F.) follow the injection of Coley's fluid. Percy goes even so far as to suggest that persons who during some acute disease have had a very high temperature for some days, do not suffer from malignant disease.

Experiments with pieces of raw beef and the hot iron at a dull heat and with thermometers placed in different parts of the beef will show that a temperature of 43.3° to 48.8° (110° to 120° F.) is produced in the tissue at points from 1.25 to 3.75 centimetres (one-half to one and a half inches) and more from the iron itself, depending to a considerable extent on the length of time of application. It might be mentioned that with the aid of a rheostat the temperature of the iron is kept at a point if possible where it does not carbonize. High degrees of heat carbonize the tissue and inhibit penetration of heat. Low degrees coagulate the tissues and encourage heat dissemination.

Another disadvantage of a high grade heat causing carbonization is that the carbon core prevents drainage and leads to the absorption of the products

of destroyed cancer cells and so injures the patient. For example, when a cancerous mass in the pelvis is grasped from the abdominal side and the heating iron is passed in the fundus of the uterus through a water cooled speculum, twenty to forty minutes are frequently required before an appreciable degree of heat change is noted in the tissues invaded by the cancer. One should not on account of this turn on more heat, for if this is done a carbon core is formed which prevents the dissemination of heat, and as a result more heat is turned on until a dangerous degree of temperature is developed.

After using radium and X rays in the treatment of cancer Percy has now abandoned them entirely, because, whilst admitting that cures of cancer of the skin have been effected by these in many cases, he considers that they cannot be regulated so as to produce their maximum effects only on the malignant cells. The consequences are that normal cells beyond the cancer area are so injured and their vitality is so impaired that healing is well nigh impossible, as witness the surgeon's efforts to heal X ray burns. Again, there is the fact that malignant cells that have received doses of radium and X rays not sufficient to destroy them, are stimulated to new activity. I know that many will join issue with me in this statement, but I must say that my own experience with the treatment of cancer by deep therapy at any rate coincides with that of Percy.

I have had several patients suffering from cancer of both the uterus and bowel treated by deep therapy and although some of them manifested considerable improvement and even apparent cure for a time, yet all of them have died from cancer. In some of those treated by deep therapy not only was there no cure, but the disease was apparently stimulated to increased activity. Further, with the application of low grade heat one is able more surely to remove any of the superficial cancers that can be removed by X rays or radium, and without the fear of subsequent distressing results sometimes found after treatment by these agents and if the patient will conscientiously carry out the after treatment, healing will take no longer and the scarring will be no greater.

I have seen in the Los Angeles County Hospital patients with X ray burns treated by wide removal of the burn with the thermocautery and the surgeons who tried this treatment, claimed that it was the only cure for the condition. I also saw patients that had been treated in this way, with perfectly healed wounds, although they had not previously responded to any other form of treatment.

I have been asked by many practitioners how the surgeon can prevent the destruction by heat of great blood vessels and nerves while using the hot iron in their vicinity. The answer in the case of the blood vessels is that they are cooled by the blood flowing inside them, just as the cylinders of an engine of a motor car are cooled by the water jacket surrounding them and in the same way one is able to boil water in a paper bag on a hot stove. Nerves stand a greater degree of heat than any other tissue

in the body. When the fat along the vessels and nerves is melted by the hot iron, say as in a dissection of the axilla, the heat is not sufficient to injure either vessels or nerves, but it is sufficient to destroy the cancer cells with which it comes in contact. One does not and cannot inoculate cancer with this treatment as one can and sometimes certainly does with a cold knife.

When it can be proved that with the proper use of heat in the destruction of cancer 12% to 15% of cases already cast aside as inoperable and hopeless by first class surgeons are showing freedom from recurrence from two to five years longer, then it will be agreed that there is something in this treatment and Percy's records of such cases are open to anyone who cares to read them.

Most of us have seen patients *in extremis* suffering from foul smelling, fungating masses in the uterus and breast and even the face and quite a few of us have seen the beneficial results following the use of the curette or cautery. This proves that the extreme condition was due to sepsis and not to cancer. Such being the case, is it not logical to pursue the condition further not with a curette which will only stimulate and spread cancer, but with the hot iron which gives us 12% or 15% chance of cure even in the most hopeless cases? Of course, the patient must be told that there is a price that may have to be paid especially in the cases of the uterus, the price being the likelihood of a fistula of the bowel or bladder. But surely it is better to put up with the inconvenience of a fistula which is certainly curable surgically, than to die of a suppurating, foul smelling cancer that may not even have metastasized. Most patients would sooner have a hole in the bladder with no cancer than no hole in the bladder and the cancer still there and with the great likelihood of subsequently having both the hole and the cancer.

Metastases in distant organs having occurred, of course, means that only palliative treatment can be used, but in all cases of local recurrence one should have recourse to the hot iron and should use it freely. If one can remove tissue as freely with the thermocautery as with a dissecting knife, then only the former should be used.

However, in actual operating there is no guarantee that living cancer cells are not being cut through and being spread to parts not yet affected. In spaces such as the top of the axilla, small nodules of possible cancer bearing tissue which are with difficulty if at all removed in the ordinary way, can easily be destroyed by the hot iron.

Following an operation by cautery, say of the breast, drainage must be allowed for and healing necessarily must be slow, as the wound edges are only loosely if at all brought together. Granulations have to form, so that it is some two months before healing is complete and if the patient is cured, this is only a minor consideration. To hasten healing and prevent contracting scars firm massage daily round the edges is all that is necessary.

I have seen several cancers of the breast removed solely by the cautery and the resulting healing

mobility has been quite equal to that achieved by the ordinary cutting methods.

Protein intoxication following the burning of cancers is a condition that is met with in some cases and death has occurred following this condition. One tries to avoid this protein intoxication by free drainage and the use of glucose if the condition does arise.

A description of the application of low grade heat in the treatment of cancer of the uterus, cervical or corporeal, is as follows:

The patient is given intraspinal anaesthesia about ten minutes before the operation is started and is rendered unconscious with small doses of ether by inhalation.

The belly is opened in the mid-line and an examination is made of the cavity to determine the extent of the disease and whether metastases are present or not. The intestines are tucked up tightly against the diaphragm with a long swab. The internal iliac and the ovarian arteries are tied in order to avoid secondary hæmorrhage. The patient is then put into position and a large water cooled speculum is inserted into the vagina; this is used to prevent burning of the vaginal walls. The hot iron is then slowly inserted into the diseased cervix and left there sufficiently long to destroy all diseased parts. It is then worked into the body of the uterus and kept there until the assistant who is holding the uterus in the abdomen with his left hand covered with a rubber glove of moderate thickness, finds the heat uncomfortable, this will occur at any time from twenty to forty minutes. If at the end of this time there is still felt some thickening in the broad ligaments, or in the bladder or rectum, the hot iron is then directed towards this point and kept there sufficiently long till the tissues are softened. One thing to be remembered is that the iron must not be moved about, for this defeats the purpose intended, that is the conduction of heat to a distance.

When one is satisfied that as much as possible is done, the iron is removed and the abdomen closed. Patients, especially those with advanced disease, should be warned that this same treatment may be required at a later date, depending on whether the results were completely satisfactory or not. Percy has opened the abdomen and treated a patient in this way on five different occasions and then effected a cure.

If when the abdomen is opened at a later date everything appears well, the surgeon may remove what remains of the uterus with a cautery knife or he may do a dissection of the lymphatic glands with a similar instrument.

Most recent treatment after the use of the hot iron, is the introduction of a copper covered instrument into the burnt out cavity. This with the aid of the rheostat and regulated by a thermometer, is kept at a temperature of 54.4° to 60° C. (130° to 140° F.) for several days.

In the Wertheim or allied operations for cancer of the uterus with the cold cutting instruments,

there is no guarantee such as there is with the hot iron that cancer cells will not be stimulated and spread and Byrnes's statement that: "For the most part ordinary operations for cancer of the uterus are as dangerous to the patient's life as the original condition itself," is as true today as when he made it in 1892.

In conclusion I say that in all cases of cancer of the *cervix uteri* the cold scalpel should not be used primarily and that cases whether early or late should be first treated with the hot iron, no matter what subsequent procedure the surgeon proposes to adopt.

SOME EXPERIENCES WITH GULLSTRAND'S SLIT LAMP.¹

By J. F. SPRING, M.D., Ch.B. (Melbourne),
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Melbourne.

I HAVE for the last twelve months been trying to master the Gullstrand slit lamp, a difficult apparatus, and having now reached a stage in which the first awkwardness has more or less worn off, it has seemed to me that those of you who are working with this instrument, may be interested to hear of my successes, difficulties and failures. I also feel that you will by your comments and suggestions help me along this new road. Further, I have thought that men who are not using the slit lamp, may be interested to hear by word of mouth exactly how much use it is in actual practice.

I have read many journal articles on this subject and most of them have been very useful, but it is obvious that this class of work is so undeveloped that every man's experience, no matter how small, is worth recording.

When I started using Gullstrand's lamp I had done some corneal microscopy, but with the old, inefficient lighting. Later on when I was in England slit lamp work was so much in its infancy that it was difficult to learn much about it. At the Washington Congress I saw and heard Gullstrand, who speaks good English, but it was only after obtaining my own apparatus that I began to take a real interest in this method of examination.

At first I was much disappointed and inclined to think that I bought what was merely an expensive ornament, but persistent effort is starting to bring its own reward and now I am reaping both knowledge and pleasure in quite unexpected spots. The real position seems to be that this apparatus is of no value to an oculist unless he is prepared to spend much time and labour upon it. It is, in fact, a scientific success, but an economic failure.

At first there seemed to me to be quite a number of faults in the equipment, but gradually I came to see that some screw which had been overlooked, made all the difference and now with the exception

of one small makeshift I am quite prepared to let the instrument remain as it is supplied.

One difficulty which seemed a little more prominent than it ought to have been, was the necessity of altering the focus of the lamp for every few millimetres that one moved the light across the cornea. Likewise having focused with the light and the microscope for the cornea I was inclined to refocus one or the other for the lens without readjusting both. Time and effort, however, overcame these small troubles and now I am getting on to the more difficult matter of using the correct light for the purpose in hand. The proper choosing of a small beam or a larger one, the using of direct or reflected light and so forth are matters which make all the difference between seeing well and not seeing at all. One's judgement as to the particular light to use in a given case seems to improve with each additional week's work and thus one sees more correctly and more quickly.

The apparatus is no doubt very useful to a research scholar, but properly used it is of much value in an oculist's surgery. The trouble is that the examination eats time. I do not agree with those who say that we should use the lowest power frequently or in fact in every case. This power is of little more use than a *loupe* and is more trouble to use. I think, however, that a conscientious worker will feel called upon to use the medium power objective in many cases and the higher power A₂ occasionally. The latter is of definite use, but in my experience when one tries to combine a strong eyepiece with a strong objective the difficulty is too great for practical work. I think it is much better to use the slit lamp only when it seems likely to be of assistance and to use it thoroughly than to use it in a casual manner in all cases.

Once the oculist has got a good grip of his instrument it becomes comparatively easy to examine a cornea, though week by week he seems able to see more in the same case. The greatest difficulty is to appreciate the significance of what one sees and in the beginning one is apt to over-estimate the importance of things which would have caused no alarm if merely viewed with a *loupe*. I have never before felt the textbook descriptions of keratitis so inadequate as I have since I started this class of work.

It is comparatively easy to see the individual blood corpuscles moving along the capillaries, if one gets suitable superficial vessels for observation, but the main purpose in following corneal blood vessels is not to see corpuscles, but to see where the vessels are placed and their type; also whether they are extending or not. Obviously much useful information is thus obtained as to the nature of the disease and its progress or otherwise. I would here like to draw attention to the fact that in many cases of superficial keratitis there are small definite stains with fluorescein, where one would not have expected them to exist.

I think it is wise for a new worker to make his examination first by the ordinary means and then

¹Read at a meeting of the Eye and Ear Section of the Victorian Branch of the British Medical Association on May 12, 1925.

to follow this with the microscopical examination. If he does this and at the start throws much more weight on his preliminary findings than on his more specialized one, he will be much less liable to error. There is no doubt that the instrument requires study, but microscopy of the living eye will probably be as wide a subject as all the rest of ophthalmology put together.

I have found very little written which directly referred to individual cases, so I am going to talk about a few of mine.

Patient I. got a flake of steel into his eye. It entered the cornea vertically and lodged there. On removing this I found that apparently a second flake was in a position adjoining that of the original one. The microscope here was on preliminary examination able to show me that the foreign body had penetrated almost to Decemet's membrane, but had not perforated. With a *loupe* I was not able to be sure of this. Then after removing the steel flake I was able to see that what appeared with a *loupe* to be another flake was merely a rust mark. This made the treatment much more satisfactory. A few days later this patient developed a conjunctivitis with some corneal epithelial damage and a great deal of irritation. The question now arose as to whether there was any cyclitis present or not. The microscope enabled one to be quite sure that there was no *keratitis punctata* and the condition cleared up promptly.

Patient II. came to me with the history that he had been receiving public hospital treatment but was not improved. He had an irritable eye with slight circumcorneal injection. The pupil was active and regular, the iris texture was good; with a *loupe* I could not make out any *keratitis punctata*. Apparently the oculist who saw him at the hospital had not thought it necessary to drop atropine into the eye. On making a slit lamp examination it was easy to pick out small but definite *keratitis punctata*. His pupil was kept dilated, but in a few days a large mass of exudate appeared on the posterior surface of the cornea. I do not think my slit lamp examination really altered my treatment in this case for the circumcorneal injection was suggestive, but still the information it gave made me feel more sure of the position.

The third case is instructive. A colleague of mine had needled an opaque lens in a young man. A few days later what were thought to be a number of spots of *keratitis punctata* were seen. Under the microscope, however, these small bodies appeared to be more granular than those usually seen in *keratitis punctata* and this suggested that they were not inflammatory, but merely small deposits of lens matter. They cleared up so promptly that I felt that this diagnosis was the correct one. A rather extraordinary thing in connexion with this case was that while the definite lumps of lens matter looked simply like sodden pieces of lens, these doubtful spots on the cornea looked quite granular.

Patient IV. is a man on whom I operated for cataract. After the extraction he had a little more

reaction than I liked, but things settled down well and he came to have sufficient sight to get about in comfort and to write his own letters; yet he is still working under obvious difficulty. He is old and timid, wishes for more vision, but is much opposed to having anything in the nature of another operation. On ordinary examination it appears that he has capsule which should be needled, but with a slit lamp he has what looks to be a definite vitreous membrane extending from the temporal part of the lens capsule backwards and inwards towards the fundus. In the present state of my knowledge I am not in a position to be sure whether this is a membrane or merely a vitreous fold, but it looks remarkably like the former. In these circumstances I am not urging this patient to have anything further done. The structure cannot be seen without the aid of a microscope.

Patient V. also had a cataract; she left the table with no vitreous loss and everything was apparently satisfactory. Three days later she could apparently see well and the eye appeared to be in good condition, but a week after the operation her vision had fallen back and there was exudate to be seen in the pupil and iridectomy area. Hazy lines were seen in her cornea and there was much circumcorneal injection. With a mirror her projection appeared to be bad. When a Gullstrand's lamp was used, one could see that the hazy lines were merely folds in Decemet's membrane and did not involve the *substantia propria*. There were no *keratitis punctata*. By using the slit lamp beam to test the projection, I was able to say that it was still quite good. Thus after a slit lamp examination I was prepared to feel much more hopeful than before it was made. The inflammatory action has now subsided, some vision is returning and I hope that a needling will give a good result later on.

I have never previously heard of the slit lamp being used to test projection. Its mounting is unsuitable for the purpose, but in other respects it is infinitely better than a mirror.

Patient VI. has a condition which I originally diagnosed as iritis with some keratitis and as she had severe pyorrhœa, this seemed to be the obvious primary seat of the trouble. In the dark room, however, her pupil dilated freely and considerable opacity of her cornea was seen, mainly in the nature of hazy lines well away from the periphery, but with a more general haze also. I put her on atropine and mercury, but her gums became so inflamed that the latter had to be stopped. At this stage I arranged for a microscopical examination and found a picture quite different to what I had expected. The iris was absolutely clear. The posterior surface of the cornea was thickly spotted with large granules of *keratitis punctata*. The hazy lines were due to folds in Decemet's membrane with small particles of exudate attached to the region of their posterior surface. The cornea itself was not infiltrated, but its upper half was thickly streaked with small straight blood vessels situated immediately in front of Decemet's membrane. Below there was a twig of vessels lying in the region of

Bowman's membrane. The two groups of vessels being present in the same eye served as a useful contrast. The interstitial vessels which I had not previously been able to see, caused me to have a Wassermann test carried out without further delay. A strongly positive reaction settled the origin of the lesion, but I am still of the opinion that the condition is a cyclitis rather than a keratitis.

To measure the depth of the anterior chamber looks easy, but is difficult. In his address at Washington, Colonel Elliot stated that it was a simple matter to make this measurement, but on his statement being challenged, he withdrew it, saying that he had written the address some time previously and more recent experience had caused him to alter his opinion.

I cannot say that I have so far gained much clinical advantage by microscopical examination of the lens. Of course one gets a remarkably interesting view of the physiological structure, sees small opacities where they are not expected and much more in that way, but these things do not help greatly though they may well do so when our knowledge becomes more advanced. Still there is a definite satisfaction in having examined a lens microscopically before one removes it and as we come to understand what we see, this examination will in all probability become almost essential.

When one starts to examine the vitreous, it is at once obvious that only part of it can be seen with the ordinary equipment. In some cases one sees an immense amount of structure, in others not so much, but still quite enough to alter one's ideas of this nominally homogeneous mass. In my experience the vitreous structure is most easily seen in myopic patients. The great difficulty once more arises when amidst so much physiological structure one has to decide what is normal and what abnormal. I heard Gullstrand say that he and Duane had just satisfied themselves by microscopical examination as to the abnormality of a vitreous which on ophthalmoscopic examination had appeared normal. I sometimes wonder if even Gullstrand and Duane would be quite sure in the majority of these cases of suspected vitreous lesions. In a recent article Wheeler wrote: "The study of the vitreous under high magnification is new business for the oculist and one's findings may assume new meaning after a better acquaintance."

To see the deeper part of the vitreous and the fundus it is necessary to use a contact glass and an arc lamp. I have not done any work in this direction and what I have read of other men's efforts seems to indicate that this method of examination is not likely to be widely adopted. Butler says it is hardly within the scope of clinical work. Von der Heypt, however, writes in a most confident and optimistic strain, as to what can be seen in the retina and other deep tissues.

A patient whom I have shown tonight is in some respects interesting from a slit lamp point of view. When seen a few weeks ago, he had a small, persistent pupillary membrane. His corneal nerves were easily seen. The normal lens structure was

readily made out in his bad eye. The light beam could be distinctly seen penetrating his vitreous, but no detail could be demonstrated there. There was a faint flaire of the aqueous fluid with the nitra lamp without the resistance being readjusted as advised by Graves. This latter point proved that his normal looking aqueous was really abnormal, but the meaning of that abnormality is not plain. Today his vitreous is starting to clear; the slit lamp reveals a granular deposit on the posterior surface of the lens. A large piece of blood clot or blood-stained exudate can be seen lying close up to the lens and extending in a direction downwards and outwards.

The cases I have related are those which seem most interesting in my limited experience and while there is nothing spectacular about them, I think that they are sufficiently striking to justify my feeling that the slit lamp is of definite value. A good man can, of course, do good work without the equipment, but one who uses it efficiently, has obviously additional scientific possibilities and in difficult cases he gets extra information where it is most needed.

Reviews.

A BOOK OF VERSE.

It was announced at a recent meeting of the Literary and Historical Section of the New South Wales Branch of the British Medical Association that Charles Edgbaston, the author of "Blue and Other Verse," is a surgeon practising in Sydney.¹ We believe this is correct and we congratulate him. He has a mastery of various verse forms and metres and an adequate knowledge of poetic expression.

Simple love songs predominate, some are dainty and playful, as "The Green Taffeta" (Triplet):

In your taffeta green
And your pretty black hair
I have never seen,
In your taffeta green,
Any girl who has been
Fit with you to compare,
In your taffeta green
And your pretty black hair.

Others breathe a restrained passion which rises in "Renunciation" to a noble height:

To be your mate, methinks, would be
A happiness too great for me:
Your life I would not mar.
Though cheered and gladdened by your smile
Of radiant joy, yet all the while
I know, belov'd you are
Beyond my orbit and my ken—
To love or hope for; but of men
There is no bolt or bar
Yet made to shut out Heaven's light.
Your slave I'll be, and claim the right
To serve you from afar,
While you, effulgent in your sphere,
Shine on, and I, my duty clear,
Worship my guiding star.

"Love's Ecstasy," an otherwise charming piece, is marred by the solecism "let you and I."

¹ "Blue and Other Verse," by Charles Edgbaston, 1924. London: Heath Cranton, Limited. Crown 8vo., pp. vii. + 56.

Our author exhibits affection for both his native and adopted countries in descriptions of pastoral and industrial England and of Australia. Elsewhere we see evidence of distant travel and of joy in field sports.

Other poems are much more ambitious, philosophical in thought and intensely literary in expression; indeed some of the allusions are so erudite as to be caviar to the multitude, though this will but enhance the appreciation of the classical scholar.

The slim volume is well printed on good paper and neatly bound. If it represents the author's first efforts, we may look forward to his future productions with confident anticipation of pleasure.

SLIT-LAMP MICROSCOPY.

OCULISTS of English-speaking countries are under an obligation to Goulden and Harris for their translation of Dr. Koby's "Slit-Lamp Microscopy of the Living Eye." It will serve to introduce British and American oculists to a subject which has been developed in Germany and Switzerland. The binocular microscope had a limited use in the examination of the eye prior to 1911. In that year Gullstrand, of Upsala, introduced the slit-lamp. By means of this lamp it was possible for the first time to project a very narrow, homogeneous and intense beam of light through the ocular tissues. Prior to the appearance of the first paper in English of this work, Koeppé, of Germany, and Vogt and Koby, of Switzerland, alone had contributed over forty papers reporting their discoveries in this new field. This covers a period of ten years. Then Gradle wrote a report on his visit to the continental centres. Since then a certain amount of original work has been done by English and American workers.

Much of this work is of great clinical value. Early changes can be detected in corneal inflammation long before they are revealed by other means. The nerve fibres, the blood vessels and even the minute endothelial cells which line the posterior corneal surface can be seen. Currents in the anterior chamber become visible, especially when corpuscles, pigment granules and other minute particles are present in the aqueous. The hidden angle and its pectinate ligament can be examined. The most beautiful study is that of the pigmented edge and the coloured irregular surface of the iris. Much has been learned of the normal and morbid histology of the lens. More is known concerning hitherto recognized forms of cataracts and new varieties have been described. Even the vitreous has become a field for interesting and valuable study.

Slit-lamp microscopy has opened a new era in ophthalmology. Therefore our indebtedness to Goulden and Harris is great. This translation is unusually clear and readable. The printing is good and the illustrations are of practical value.

MODERN TREATMENT.

THE value of books devoted purely to treatment has repeatedly been questioned. If a book on treatment is to be of any value several facts have to be remembered. In the first place the diagnosis has to be established beyond any doubt. Secondly it must be quite certain that the manifestation of the disease is of a type to which the particular treatment may be applied. Thirdly the practitioner must vary and adapt the measures recommended to the particular needs of the patient. In other words, treatment based on books devoted to that subject is potentially dangerous in that if care is not used it is the disease and not the patient which is treated.

¹ "Slit-Lamp Microscopy of the Living Eye," by Dr. F. Ed. Koby. Translated by Charles Goulden, O.B.E., F.R.C.S., and Clara Lomas Harris, M.B.; 1925. London: J. A. Churchill. Demy 8vo., pp. 221, with illustrations. Price: 10s. 6d. net.

If used properly books on treatment have a distinct sphere of usefulness. This has been recognized by the editor of *The Lancet* and weekly articles have been published on treatment of different clinical conditions. The articles have been written by recognized authorities and have been contributed at the request of the editor. The first seventy-six articles have been reprinted in book form.¹ The range of subjects in this, the first volume, is wide and it is impossible in the space at our disposal to discuss them in any detail. The book will undoubtedly fill a need that is felt by many.

A PRACTICAL MANUAL FOR WORKERS IN PATHOLOGY.

Most laboratory workers are familiar with Mallory and Wright's "Pathological Technique" a new edition of which is to hand.² This edition is the eighth since the book was first printed in 1897.

The first part of the book which includes one third of the work, is devoted to a description of various methods used in histological work. This embraces methods of fixation of tissues and cutting, staining and mounting of sections and also contains much useful information on selective staining of tissues.

Methods of preparation of the various reagents used are also given. A useful section is included on the preparation of museum specimens.

Four divisions of the book are given to the study of bacteriology and include methods of preparation of culture media, culture methods suitable for various organisms, microscopical examination of bacteria and a brief description of the various pathogenic bacteria and fungi.

Selective methods are given for the isolation and classification of the more important forms including the common forms of anaerobic pathogens.

The section dealing with culture media includes a useful description of the colorimetric (hydrogen ion concentration) method for determining the reaction of media in which the recommendations of Clark and Lubs are followed. The table of indications recommended by these workers is also given.

A section on animal parasites deals with the common protozoal and metazoal parasites affecting man and selective methods for their detection and staining are given.

The section devoted to the study of the blood includes in addition to the methods employed in blood histology a description of technique employed in the study of coagulation mechanism, bleeding time and clot retraction and an interpretation of the disturbances in the coagulation mechanism.

Special methods of examination of the blood are given including the percentage volume of red corpuscles, estimation of blood volume and a study of the resistance of red corpuscles with an interpretation of results.

Methods for determining the iso-agglutination groups are also given.

In the section given to the study of serological technique methods are given for the application of the complement deviation test to the diagnosis of syphilis, gonorrhoea, echinococcus infection and glanders. Precipitin tests for the diagnosis of syphilis including the Kahn test are also described. The method given for the Wassermann test is that used at the laboratory of the Boston City Hospital, while reference is also made to the Noguchi modification and to J. H. Wright's modification of the reaction. This section would have been more instructive had reference been made to the more modern method

¹ "Modern Technique in Treatment": Volume I. Published by *The Lancet*, London; 1925. Sydney: Angus & Robertson, Limited. Demy 8vo., pp. 376. Price: 12s. 6d. net.

² "Pathological Technique: A Practice Manual for Workers in Pathological Histology and Bacteriology, Including Directions in the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods," by Frank Burr Mallory, A.M., M.D., and James Homer Wright, A.M., M.D., S.D.; Eighth Edition, Revised and Enlarged; 1924. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; Demy 8vo., pp. 666, with 180 illustrations. Price: 32s. 6d.

embracing fixation in the cold, instead of at 37° C. as recommended. This section also includes methods for the study of cerebro-spinal fluid among which are the colloidal chemical tests and quantitative estimation of sugar (Folin and Wu method).

A section on *post mortem* examination gives a useful description of the procedure and includes a newly contributed chapter on methods of opening the skull and examination of contents in the new-born.

In the addenda various methods of general utility are described.

The book does not purport to be a treatise on any one of the subject matters with which it deals. It has been designed for practical use in laboratories both as a guide to beginners and a source of reference to the advanced both of which requirements it amply fulfils.

OPHTHALMIC PLASTIC SURGERY.

NOTHING but praise can be bestowed on E. B. Spaeth's work on plastic surgery.¹ It covers the whole field from reconstructions of lids and orbits to operations for the relief of trichiasis and entropion. The author is partial to local anaesthesia. The illustrations and diagrams are good and effective. It is interesting to read that in referring to Tenon's capsule implantations after enucleation he considers there are no special difficulties present in secondary implantation. This may bring comfort to many young adults who have had an eye enucleated without the insertion of a glass ball. Especially when the other eye is a prominent one, failure to insert a glass ball leads to such an ugly deformity that a ball insertion should never be omitted except in old people and in the presence of sepsis. The author favours organic tissue, such as rib cartilage. But where glass gives such satisfactory results it seems unnecessary to subject the patient to the additional shock of a rib resection. There is a new method of tarsus resection suture figured which might be worth a trial. The fornical conjunctiva is brought down by three interrupted sutures which emerge through the skin just above the lash margin and are there tied over a roll of cotton. This should also materially assist in the correction of the entropion which is generally present in such cases. There is a good index and a full bibliography. Recognition is given to Gillies's valuable work in England. This book can be heartily recommended as a welcome addition to the plastic surgeon's library.

MEDICAL MUSEUMS.

BULLETIN No. XI. of the International Association of Medical Museums maintains the standard of previous numbers.² A photograph of the late Clifford Allbutt occupies the frontispiece and is accompanied by an obituary notice which pays fitting tribute to that great British physician. In one of the editorials it is pointed out that recently there has been a new and lively interest in cellular pathology. This is clearly evidenced in the grading of hospitals by the Council on Medical Education and Hospitals of the American Medical Association upon the percentage of histological examinations of surgical tissue and the proportion of autopsies to deaths. Another substantial piece of evidence of this new popularity of pathology is the acceptance of the offer of seven thousand five hundred dollars annually for five years from the General Board of Education by the American Association of Pathologists and Bacteriologists upon the condition that they change

the name of their official organ from the "Journal of Medical Research" to "The American Journal of Pathology." By this subsidy it was hoped that more young internes would be encouraged to enter this field, to fill the lack of pathologists which hospitals find in their attempts to obviate the deficiencies in histological and pathological examinations noted in their inspection reports, and thus to enable them to meet the requirements for hospitals approved for internship by the American Medical Association.

There is no question of the value of autopsies to the medical service in the hospital. One of the best conducted hospitals in the United States admits that 60% of the conditions seen at autopsy are wrongly or incompletely diagnosed. Dr. Flexner, director of the Rockefeller Institute for Medical Science, says that it was through the performing of innumerable autopsies that Pasteur discovered his treatment of rabies. This point is emphasized because we believe that in Australia the position of the pathologist and what is far more important, of pathology, though improved of recent years, still leaves much to be desired.

Among the original contributions in this Bulletin is a study of microscopical sections from a museum specimen which has been preserved in alcohol for one hundred and eighteen years. The tumour is apparently a mixed growth arising in a salivary gland. It was removed from the face and weighed 2,300 grammes (about five pounds). Several modifications of existing methods of mounting and preparing museum specimens are included. E. Christeller, of Berlin, contributes two articles, one on a new, simple method for the normal and pathological histotopography of organs and another on a method of obtaining stereoscopic microphotographs for all magnifications. A large number of short illustrated articles deal with technique in the various branches of pathological work and a most valuable article on museum classification is contributed by Maude E. Abbott who deals in particular with the Wyatt Johnson descriptive classification of museum specimens, as applied in the pathological museum of McGill University.

A FOOD MANUAL FOR DIABETICS.

"FOOD FOR THE DIABETIC," by Mary Pascoe Huddleson, is an excellent manual for diabetics on what to eat and how to calculate it with common household measures.¹ The author is a lay consulting dietitian, an obvious American appointment none the less excellent for that and there is an introduction by Nellis Barnes Foster, M.D. The book gives the diabetic briefly and simply the nature of his disease and information on diet in order that he may carry out intelligently the physician's directions. An excellent method of calculating the diet is described according to the patient's tolerance and the amounts are given both in grammes and ounces and also in terms of household measurements. A useful hint is given in regard to estimating the size of slices of bread or meat in inches. The introduction emphasizes that the corner stone of diabetic treatment is diet. This is needful in view of the booming of "Insulin" by the lay press. Again we find emphasized that gluten breads contain generally a great deal of starch, a point that must always be made with diabetics in view of fallacious advertisements.

There is a chapter at the end of the book on urine testing which is useful. Benedict's solution is recommended, but one is rather surprised to note that there is no mention of the simple ferric chloride test for diacetic acid. This might well have been included as is done by Joslin in his world famous "Diabetic Manual." Apart from this one can find nothing but praise for this manual and it can be safely recommended not only to all diabetics, but to nurses and practitioners alike.

¹"Newer Methods of Ophthalmic Plastic Surgery," by Edmund B. Spaeth, M.D., F.A.C.S., 1925. Philadelphia: P. Blakiston's Son & Company, Royal 8vo., pp. xix. + 258, with 163 illustrations. Price: \$5 net.

²"Bulletin Number XI. of the International Association of Medical Museums and Journal of Technical Methods," Editorial Committee Maude E. Abbott, Major James F. Coupal, 1925. New York: Paul B. Hoeber, Incorporated. Demy 8vo., pp. xli. + 151. Price: \$3.

¹"Food for the Diabetic," by Mary Pascoe Huddleson, with an Introduction by Nellis Barnes Foster, M.D.; 1923. New York: The MacMillan Company; Sydney: Angus & Robertson. Crown 8vo., pp. 87. Price: 6s. net.

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A Retrospect.

Medicine.

THE year 1925 has witnessed much good work in clinical medicine. Some of this work has been carried out in Australia. Medicine in the limited sense in which it is employed for the purposes of this series of articles, does not lend itself as readily as do some other branches of the medical sciences to great or startling discoveries. Valuable advance is usually made by diligent application of the principles of physics, chemistry and biology and in consequence the more important contributions to knowledge in clinical medicine are dependent on work that is not new.

Much information has been gathered concerning the action of the pancreatic hormone since Banting, Best and Macleod isolated a substance which they have called "Insulin" from the pancreas after removal of the proteolytic ferments. The treatment of diabetes is directed toward the abolition of the glycosuria and the establishment of a glucose content of the blood fluctuating within the normal limits. It is recognized that the proper regulation of diet is essential and that the exhibition of "Insulin" is one, albeit the most powerful means to attain the objective of the treatment. The early gain in weight is held to be caused by water retention without the production of œdema. There is no alteration in the hæmoglobin value nor in the number of erythrocytes; neither is the blood pressure affected. Large doses of "Insulin" are given for diabetic coma. In Toronto the routine practice is to administer as much as one hundred units of "Insulin" with one gramme of glucose per unit. The amount of glycogen stored in the liver is said to be relatively low in diabetic coma. The breaking down of the fats and proteins is inhibited by glucose and by giving glucose the production of ketones is prevented.

Attention has been directed to the urea content of the blood of diabetics. It has been shown that

there is no relationship between the blood sugar and the blood urea values. An injection of "Insulin" does not cause any change in the urea content of the blood. It has also been ascertained that the blood urea concentration is within normal limits in diabetic coma. Some interesting work has been carried out in regard to the vascular changes associated with diabetes. The form of arteritis, according to certain French observers, is characterized by changes of lesser severity than those which lead to gangrene. Diabetics are said to be prone to sporadic arterial infections, involving the peripheral vessels and leading to localized fibrosis.

Tuberculosis has again provided a fertile field for investigation. Mikulowski has demonstrated the value of a search for tubercle bacilli in the fæces of children in whom the differential diagnosis of pulmonary lesions is often a matter of great difficulty. The finding of the bacilli in the fæces necessarily indicates the existence of a pulmonary or intestinal infection, provided that all the ingested food is uncontaminated by the bacilli. The failure to discover tubercle bacilli, on the other hand, is no evidence against a tuberculous infection of the lungs.

Bennett and Dodds advocate the addition of glucose to the diet of persons suffering from pulmonary tuberculosis. They have ascertained that the ingestion of five hundred grammes of glucose does not produce glycosuria or hyperglycæmia. This quantity of glucose yields one thousand calories.

There is still much difference of opinion concerning the value of heliotherapy in pulmonary tuberculosis. While McCutcheon claims that its value has been established beyond doubt and that moist signs disappear in patients who become pigmented after moderate exposure to the sun's rays, others are less optimistic. The majority, however, admit that heliotherapy has some curative action, notably in patients with extra-pulmonary lesions and those with pulmonary exudates. It has been stated that excessive application of this treatment is as dangerous as the injection of tuberculin in excessive doses.

Some important communications on hydatid disease have been published by Dew, Kellaway and

Miss Williams. The intradermal reaction, first described by Casoni, has been exhaustively investigated by these workers. They find that the immediate reaction, characterized by an urticarial wheal, is of greater diagnostic value than the complement fixation test. The immediate reaction may be obtained many years after removal of the hydatid cyst and clinical cure. There are, however, certain anomalies connected with the reaction which demand further investigation. Dew has found as a result of a further study that daughter cyst formation in hydatid disease is due to an interference with the normal development of the parasite. He holds that this phenomenon is an expression of the activity of the germinal cells of the parasite of a defensive nature.

Van den Bergh's test for liver function is holding its own. The phenyl-tetrachlor-phthalein test has gained some friends; Gonzales and Karr have also investigated the hæmoclastic test. Neither test has been able to replace the Van den Bergh test. Maud and S. O. Cowen have continued their studies on the mechanism and application of this test and have come to the conclusion that it is capable of detecting jaundice of such a grade that the coloration of the skin is not recognizable. Hæmolytic jaundice can be distinguished from non-hæmolytic jaundice by its means. It does not indicate the site or the nature of the obstruction in obstructive jaundice.

Ultra-violet radiation from the quartz mercury vapour lamp has been the centre of much scientific research. It has been known for some years that animals fed on a dietary deficient in the anti-rachitic vitamins, continue to grow satisfactorily when exposed to ultra-violet rays. It has further been found that the liver of such animals is capable of protecting other animals from rickets when they are fed on a rickets-producing diet. More than that, when food deficient in these vitamins is exposed to ultra-violet rays, the food can be given to animals without inducing rickets. Block and Faber have treated children suffering from rickets and tetany by means of ultra-violet radiation and have noted that there is a prompt return to normal conditions of the calcium and phosphate content of the blood. In no instance was cod liver oil given.

The radiation causes a fall in the blood sugar concentration. This fall is held to be caused by an increased production of the pancreatic hormone. The hypothesis has been elaborated that ultra-violet rays exert an activating influence on the tissues in conditions of lowered bodily function and that a similar activating principle exists in cod liver oil. Foods containing certain lipoids are held to act as vehicles for this activating principle. Many foods that are normally inactive, can be activated by ultra-violet radiation to such a degree as to render them equivalent in value to cod liver oil.

Tularæmia and fresh-water lake disease, two more or less recently discovered diseases of rodents and horses respectively, have attracted some attention. Both diseases have been encountered in man.

Favourable reports have been published of the effect of Rosenow's serum in epidemic poliomyelitis. This disease has been prevalent in New Zealand and more recently many cases have been reported in Australia.

Surgery.

Cancer as usual takes the first place in the record of the year's work in surgery. While much important investigation has been carried out and while highly competent observers have recorded their observations, caution must be exercised in the attempt to draw conclusions concerning the ætiology of carcinoma of the stomach. Dible claims that under ordinary circumstances a gastric ulcer does not undergo malignant degeneration and conversely that carcinoma of the stomach rarely arises from a chronic ulcer. A special commission was appointed in Manchester to investigate this subject. The members have reported that a true gastric ulcer does not give rise to true carcinoma, but that gastric carcinoma usually forms on the site of a chronic ulcer. The workers at the Mayo Clinic regard every ulcer of the stomach as a potential cancer. Numerous operations have demonstrated without any doubt that benign tumours of the stomach cause symptoms. Meyer and Brams have encountered myofibromata, polypi, adenomata, hypertrophic pyloric stenosis, syphilis of the stomach and inflammatory pancreatitis. The

differentiation of these tumours from carcinomata is often very difficult.

The treatment of carcinoma of the stomach differs in different countries and different clinics. Eiselsberg recommends the two Billroth operations; Devine prefers gastric exclusion.

Nadeau and Kampmeier have revived interest in the practice of abdominal endoscopy. They have carried out many experiments and now use this procedure in certain abdominal conditions. Their method consists in inflating the peritoneal cavity with air and introducing an ordinary cystoscope through a stab wound. Their best results have been obtained in the gastric and pelvic regions.

As will be mentioned in the chapter dealing with orthopædic surgery the controversy started by Royle's method of treating spastic paralysis by ramisection has led to some highly interesting observations. Closely allied to this work is that associated with the division of the sympathetic for a large variety of pathological conditions. Severe bronchial asthma and certain forms of angina have been dealt with in this manner. Asthma has been successfully treated by von Genersich by resection of the cervical sympathetic ganglia, first on the one side and then on the other. Hofer prefers the division of the cardiac depressor fibres of the vagus; Kaess has resected the cervical sympathetic. Jiano has carried out periarterial sympathectomy for chronic ulceration of the leg, Raynaud's disease, some forms of gangrene, painful and œdematous amputation stumps and *pruritus ani* and *pruritus vulvæ*.

Thring has performed a signal service to surgery by examining the many points of importance in connexion with cancer of the rectum. He has taken into account the surgical objective of operative treatment, the anatomy of the region, the pathology of the lesion and the technical problems involved. He has compelled the thoughtful surgeon to admit that Miles's operation is the most radical and at the same time the best operation. The surgeon must master the details of the operation if he would achieve full success.

Some interesting work has been done on the surgery of the thyroid gland. Lahey and Burton-

Hamilton have endeavoured to standardize rules for the recognition of hyperthyroidism. They regard persons with cardiac disturbance and goitres or prominent eyes or transient attacks of auricular fibrillation as possible subjects of hyperthyroidism. A patient in whose history there is a discrepancy between the cardiac signs and the symptoms, is also regarded as suspect. Hyperthyroidism is not to be diagnosed in the absence of a raised basal metabolic rate.

Walter maintains that complete thyroidectomy can be performed without any risk of *cachexia stumipriva*. Garberson advocates partial thyroidectomy for colloid goitre associated with adenoma, for unsightly goitres, for goitres causing pressure symptoms and for goitres undergoing malignant degeneration. This observer has endeavoured to determine the proper treatment of goitre under varying conditions. Conservative treatment appears to be favoured by some surgeons, at all events in certain circumstances. The association of malignant disease of the thyroid gland with preexisting goitre has also been studied. Breitner claims that malignant disease usually occurs in persons who have had goitre. It is said that the duration of life after the onset of the malignant change is about one year.

Martin is strongly of opinion that the removal of the gall bladder never produces serious interference with nutrition. On the other hand it is admitted that adhesions at times follow cholecystectomy and cholecystostomy and that the common bile duct may be injured during the former operation. Biesenberger operates as soon as possible after the first attack of cholecystitis and cholelithiasis. He finds that the risk is vastly greater if the condition is allowed to become chronic. Haggard also states that better results are obtained by operation for calculous conditions and usually for cholecystitis than by delay and internal treatment. The gall bladder should not be removed during the acute stage of cholecystitis. At this period the mortality is appallingly high.

Dott and Bailey have come to the conclusion that the syndrome known as acromegaly corresponds with a hypophyseal chromophilic adenoma and that

hypopituitarism corresponds with a hypophyseal chromophobic adenoma. The treatment of these conditions is not yet satisfactory.

Several useful discussions on the treatment of fractures have taken place in Australia and elsewhere. Surgeons are paying an increasing amount of attention to this subject.

Obstetrics.

The year 1925 will be long remembered as one of great importance for the advancement of obstetrics in Australia. The recognition by Dunbar Hooper and his colleagues on the Melbourne Permanent Committee for Post-Graduate Work that the time was ripe for a drastic reform in the teaching and practice of obstetrics during the preceding year, following as it did on a growing demand for a change, witnessed several innovations of far-reaching significance. In the first place at the University of Sydney a chair of obstetrics has been created and Professor J. C. Windeyer has been given an opportunity to recast the teaching of the science and practice of midwifery in accordance with modern conceptions. His task has been boldly begun; he has planned adequate clinical instruction and satisfactory practical tuition for students. Almost simultaneously a splendid course of post-graduate lectures and demonstrations was held in Melbourne and general practitioners from near and far flocked to learn from the experience of those who had rendered themselves proficient and expert as specialists in this important branch of medical work. In November Marshall Allan entered upon his duties as the first Director of Obstetrical Research at the University of Melbourne. It is impossible to exaggerate the importance of this undertaking. It opens up a new era in obstetrical work and raises hopes that the sacrifice of life and health among mothers and their babies may at last receive a real check. Mention should also be made of the valuable report on death and disability from childbirth compiled by the Obstetrical Subcommittee of the Victorian Branch of the British Medical Association after the circulation of a questionnaire.

The publication of a prize essay on the causes and prevention of maternal morbidity and mortality by

E. S. Morris aroused intense interest in medical circles and among the public. From the point of view of preventive medicine, this work has indicated the direction of reform. Matters has contributed a valuable summary of modern developments in obstetrics. The essays of Marie Brown, of Hubert Jacobs and of Ellen Kent Hughes are also helpful.

Elsewhere some good work has been conducted. Peham and others have investigated the value of the various forms of narcosis in labour and have come to the conclusion that morphine-scopolamine partial narcosis is uncertain and is not free from risk for the infant. The diagnostic value of repeated leucocyte counts in ectopic pregnancy has been demonstrated.

Gynæcology.

Blair Bell has claimed good results from the use of colloidal preparations of lead in inoperable cancer of the uterus and other organs. Until more information is available, it would be unwise to expect great assistance from this treatment. The idea is not new and the results from the employment of other heavy metals in colloidal form have not been encouraging.

Fourness Barrington has contributed a valuable paper on the uses and abuses of the curette. He has not feared to write frankly from a wide experience and has left no doubt in the minds of his readers concerning the grave danger of improper or unskilled application of an instrument which can be of great value and can inflict irreparable injury.

Considerable advance has been registered in the treatment of chronic infections of the *cervix uteri* by diathermy. This method of applying heat is by no means a new one; many years ago Keating Hart called it fulguration. It is being employed with increasing frequency for the post-operative treatment of carcinoma of the cervix and for chronic gonorrhœa.

Many valuable papers have been published on the pathology of various conditions of the pelvic organs. Among these mention should be made of a summary of the physiology of the placental tissues by Gilbert.

Neurology and Psychiatry.

IN the neurological literature of the past year the most interesting feature has been the continued exploration of the sympathetic nervous system. Much has been written concerning those nervous disturbances which have received the names vagotonia and sympathicotonia and allied conditions; some of this has, perhaps, been more of a speculative than conclusive nature. In addition the influence of the sympathetic and parasympathetic nervous system in their relation to various bodily functions and in the causation of various physical conditions has been studied. The initial stimulus for much if not for the greater part of this research came from the classical work on the sympathetic innervation of muscle by Royle and the late J. I. Hunter. Concerning this certain adverse criticism in connexion with its practical application that has come from America, does not affect the security of its foundation. The basis of the work has been challenged by Huggett and Mellanby, on the ground that drugs that paralyse the motor fibres of the sympathetic system, do not evoke an increase of tonus, that drugs that stimulate the motor nerve endings of the parasympathetic system, have no effect on decerebrate rigidity and that drugs that paralyse the motor nerve ending of the somatic system of nerves, remove all traces of decerebrate rigidity. Apart from the need for confirmation of their experimental evidence, it will be necessary to prove the correctness of their premisses before a doctrine based on direct evidence can be upset by an hypothesis based on inductive reasoning.

French neurologists in congress have discussed the subject of amyotrophic lateral sclerosis. There is still doubt whether amyotrophic lateral sclerosis, progressive muscular atrophy and progressive bulbar paralysis are independent of one another or manifestations of one disease. André Leri brought out an important fact which has also been demonstrated recently by Martin. It is that certain cases of syphilitic meningo-myelitis simulate amyotrophic lateral sclerosis very closely. Since these conditions respond to antisyphilitic treatment, it becomes necessary to discover whether or not syphilis is a factor in every patient. It has also

been recorded that the clinical picture of amyotrophic lateral sclerosis has followed an attack of epidemic encephalitis.

Multiple neuritis was discussed at the annual meeting of the British Medical Association at Bath. The many interesting problems concerning this disease have been restated and the present state of knowledge has been summarized.

As a result of the work of Camus and Roussy that has been described by some as pointing to the "dethronement of the pituitary gland," further observations have been published in support of the implied contention that the so-called pituitary syndromes are the outcome of a neuronie rather than a hormonal disturbance. This means that a destruction of adjacent nervous structures rather than glandular disease is the essential factor. This point, however, cannot be regarded as settled.

Harvey Cushing in introducing a paper by Dott and Bailey has advanced a belief founded on the study of adenomata of the pituitary gland, that when the condition appears clinically to be one of hyperpituitarism or acromegaly, an increase of cells of the chromophilic or eosinophilic type is found, but when the condition is one of hypopituitarism, the adipose genital syndrome, the same cells are found to be reduced in number or they are absent. Reference should be made in this connexion to the interesting work of Prior on the glands of internal secretion and their influence on corporeal development.

In the realm of psychiatry no essentially new facts of importance have been discovered. The problems bearing on sociology, mental hygiene, incipient insanity, mental deficiency and responsibility have been kept in view and advanced toward solution and betterment. In the treatment of insanity and of the insane the importance of attention to physico-chemical and structural changes is receiving recognition. The modern school insists on thorough investigation of all the possible factors that can be weighed or measured. The scourge of insanity following spirochætal infection is being lessened by improved antiluetic treatment. More proof is forthcoming that inoculation of the parasite of malaria benefits general paresis.

Abstracts from Current Medical Literature.

PÆDIATRICS.

Pertussis.

THORVALD MADSEN (*Boston Medical and Surgical Journal*, January 8, 1925) discusses the bacteriology, diagnosis, prevention and treatment of whooping cough. In Denmark pertussis causes a far greater number of deaths than any of the other infectious fevers. The death rate by age is highest under one year. Statistics also go to prove the old saying about the relative immunity, whether congenital or due to other causes of the first month of life and the dangers of the second half of the first year. Although no absolute proof has been found that the Bordet-Gengou bacillus is the cause of pertussis, the facts that it is always present at the beginning of the disease when the infection is greatest and that its frequency decreases during the course of the disease seem to indicate that it is so. Another reason why it is permissible to consider this bacillus as the cause of pertussis is the regularity with which complement fixation appears in the patients. Out of one hundred and fifty-two specimens of blood tested by Chievitz and Meyer one hundred and four yielded reactions. After the first week the reaction increases gradually and reaches its maximum in the fifth and seventh weeks, after this it slowly begins to decline. In agreement with the fact that complement fixation appears in whooping cough patients, it is possible to cause an increase in the amount of complement fixation substance in persons vaccinated with whooping cough vaccine. The Danish State Serum Institute since 1916 has made a vaccine containing ten million Bordet-Gengou bacilli per cubic centimetre. The vaccine is injected intramuscularly or subcutaneously three times with four days' interval in doses of 0.5, 0.7 and 1.0 cubic centimetre. In an epidemic which occurred in the Farøe Islands, two thousand and ninety-four patients were vaccinated and five deaths occurred. Six hundred and twenty-seven patients were not vaccinated and eighteen died. The mortality amongst the non-vaccinated was twelve times as great as among the vaccinated and the attacks were much more severe. Vaccination is as a rule most effective when carried out about a week before the disease breaks out.

Pyloric Stenosis of Infants.

WILBURT C. DAVISON (*Bulletin of the Johns Hopkins Hospital*, September, 1925) deals with the medical treatment of pyloric stenosis of infants. In his series of thirty-two infants, suffering from unmistakable hypertrophic stenosis of the pylorus, who were treated medically, three died—a mortality of 9%. The fact that in many cases of pyloric stenosis a pyloric tumour can be felt only after a peri-

staltic wave has passed, would seem to indicate that the hypertrophied pylorus is relaxed between gastric contractions. Because of this fact medical treatment which consists of the feeding and refeeding of woman's milk, is frequently successful. If food is administered persistently, eventually some of it may pass the hypertrophied pylorus during one of its periods of partial relaxation. In this way the patient's nutrition may be maintained until the growth of the digestive tube compensates for the hypertrophy of the pylorus. Certain types of patient, however, should be operated on before medical therapy is attempted. First are those infants who come to the hospital with unmistakable signs of complete pyloric obstruction, that is with the starvation type of stool and a history of having vomited all food and water for several days. The second type of patient in whom an early operation is advisable, is the breast-fed infant whose mother either through lack of cooperation or because she lives at a distance from the hospital cannot nurse her child regularly. Medical treatment may cure these patients, but frequently the mother's milk supply will fail and then the dangers of convalescence will be greater than the operative risk. The treatment consists in feeding the infant with a sufficient amount of mother's milk at intervals of four hours and in giving him at least one hundred calories per kilogram of body weight per day. The amount varies from sixty cubic centimetres (two ounces) at a feeding for the smallest baby in this series to one hundred and twenty cubic centimetres at a feeding for a child of 4.5 kilograms (ten pounds) weight. If this feeding is vomited within two hours, an amount of mother's milk approximately equal to that vomited is given. If this is vomited, the infant's stomach is washed out with water or 1% sodium bicarbonate solution and an amount of milk equal to that vomited is left in the stomach before the tube is withdrawn. The great disadvantages of the medical treatment of these cases are the large amount of human milk required and the prolonged sojourn in hospital with the consequent exposure of the poorly nourished child to infections.

Ascariasis.

ANGELICA PANAYOTOU (*British Journal of Children's Diseases*, July-September, 1925) describes a case of ascariasis with benign jaundice. A boy, aged eight years, was admitted to the Polyclinic for Women and Children with generalized jaundice, but without pain or pyrexia. The skin and conjunctivæ were stained a deep yellow, the stools were clay coloured and the tongue slightly coated. There was no intestinal disturbance apart from dizziness, nausea and loss of appetite. The urine was of a deep mahogany colour. Hey's and Gmelin's tests yielded strong reactions. There

was no bradycardia or pruritus. On microscopical examination of the stools the ova of *Ascaris lumbricoides* were found. "Santonin" was therefore ordered. The following day the patient passed ten round worms, measuring from ten to twenty centimetres in length. The jaundice at once improved considerably and two days later the patient was regarded as cured. It is not possible to say whether the invasion of the common bile duct by the ascari caused a mechanical obstruction and the appearance of jaundice or whether the phenomenon was due to the toxic action of the parasite. The disease, if left to itself, may cause grave symptoms or even death.

Arthritis in Childhood.

F. J. POYNTER (*The Lancet*, April 18, 1925) discusses arthritis in childhood. In these cases with few exceptions the factor of infection can be clearly traced. There are nevertheless as in the adult some mysterious conditions variously termed Still's disease or rheumatoid arthritis. When the occurrence of fever, enlarged glands and spleen, sweating and general toxæmia is recalled, the author feels that Still's disease must also be infective in origin. Reference is made to an arthritis described by Poncet in 1897 as a "tuberculous rheumatism." Acute tuberculous polyarthritis may occur in children and it may easily be mistaken for rheumatism, but the child may die of tuberculous meningitis. After referring to the various forms of infective arthritis, the author describes a very unusual form met with in young children and adolescents which is associated with scleroderma and Raynaud's phenomena. In these cases the skin is like leather and cannot be picked up from the hardened and atrophied muscle below. The trunk and the extremities may be affected and the articulations are stiff from the induration of their ligaments. The hands and feet appear withered and attacks of cyanosis may occur and be accompanied by acute pain. Over the elbows the skin becomes reddened and so thin that the bones seem ready to break through. To a lesser degree there is the same appearance over the knee joint. The usual history of these patients is that there have been attacks of arthritis or as they have been termed "rheumatism" and that these have gradually increased in gravity and duration.

Neonatal Pyelitis.

L. W. SAUER (*The Journal of the American Medical Association*, August 1, 1925) publishes an analysis of fifteen cases of neonatal pyelitis, a condition which he thinks is easily and frequently overlooked. The patients were all between the ages of six and twenty-eight days and all but two of them were boys. For some reason the urinary tract of the male infant is a favourable pasture for the colon bacillus; but in none of the patients were there defects of the external genitalia. The symptoms were almost invariably

gastro-intestinal, though sometimes referable to the central nervous system. The infecting organism was *Bacillus coli communis* most usually (in fourteen of the fifteen cases), but the urine of one infant contained *Bacillus enteritidis* and the child died of a meningitis due to this germ. The diagnosis hinged in every instance on the presence of numerous polymorphonuclear leucocytes in a sample of fresh, uncentrifuged urine which was always strongly acid. Culture of the urine yielded growths of *Bacillus coli communis* in fourteen instances, and of *Bacillus enteritidis* in one case. Diuretic treatment and the exhibition of alkalis caused a quick improvement. Sauer considers that the disease is due to the invasion of the blood stream by pathogenic colon bacilli from the bowel.

ORTHOPÆDIC SURGERY.

Sciatic Pain.

MURRAY S. DANFORTH and PHILLIP D. WILSON (*Journal of Bone and Joint Surgery*, January, 1925) maintain that sciatic pain usually has no demonstrable cause even upon careful examination. It presents so striking a clinical picture that it is described as a disease entity, but from the orthopedic point of view the neuralgic neuritis is only a secondary manifestation and the primary reason is to be found in a pathological process involving the lower portion of the lumbar spine or the sacro-iliac joints. The condition occurs chiefly in adult life and there is frequently a history of preceding trauma. The pain may appear as lumbago and after a variable period may make its appearance in the thigh, leg or ankle. During the period of acute pain and subsequently for a varying period, the spinal deformity is present, the trunk being tilted to one or the other side. The attack may last for years. The authors determined to study the anatomy of the lumbo-sacral region by actual dissection and then the clinical manifestations and the results of neurological and X ray examinations of a series of patients suffering from sciatic pain without obvious cause. It was found that the largest nerve root in the lumbo-sacral region, the fifth, always had the smallest intervertebral foramen, while the fourth was rarely large enough to fill the opening; the second and third were invariably too small. In regard to the structures outside the canals the authors describe the relationship of the various nerve roots to the vertebral column and sacrum. In two dissections they found the fifth root wholly embedded in a canal formed by spurs on the lateral margin to the adjacent articular surfaces of the fifth lumbar vertebra and the sacrum. The first, second and third sacral nerves were not in direct contact with the sacro-iliac joint. In regard to movements

of the vertebral column it was found that hyperextension of the spine might lead to compression of the fifth lumbar nerve, but flexion of the thigh with the knee extended could cause a definite tightening of the third, fourth and fifth lumbar roots; hyperextension of the thigh might relax these structures. From their dissections the authors conclude that nerve pain due to joint disturbances might occur in the fourth root, in the intervertebral foramen, at the lower margin of the sacro-iliac joint (in the fifth root it might occur in its course in the intervertebral canal), at the lateral margin of the joint between the fifth lumbar body and the sacrum and at the lower margin of the sacro-iliac joint. They are convinced that the chances for nerve involvement are much greater in the lumbo-sacral region than in the sacro-iliac region. The clinical investigation consisted of an examination of twenty-one patients. The requirement was that they should make a definite complaint of pain in the distribution of the sciatic nerve for which on preliminary examination no obvious explanation could be found. Pain was present in the back of seven patients. When the pain extended below the thigh as it did in eighteen patients, it was superficial and localized in definite areas. In three persons the leg pain was described as being deeply seated and not well defined. The spine was found to be inclined away from the site of pain in fourteen patients, towards the site of the pain in four and in one the inclination alternated. There was usually an increase in the lumbar lordosis. Sometimes there was flattening and when this was present, it was very striking. All patients had limitation of movement especially of hyperextension and lateral flexion in the opposite direction to the inclination of the spine. In two patients there was no tenderness. Eleven patients complained of tenderness over the posterior lumbo-sacral joint on the affected side. In three there was tenderness over the sacro-iliac joint, but in each the point of greatest tenderness was over the superior gluteal region. In eleven there was tenderness over the great sciatic notch. Flexion of the hip with the knee straight was limited on the affected side. In ten patients there was either complete absence or diminution of the ankle jerk, in two the knee jerk was diminished on the affected side. Areas of disturbed cutaneous sensibility were present in nine patients; in six it was diminished, in three it was increased. There was motor disturbance in one patient and atrophy was present in nine. X ray examinations were carried out in all the patients. In twelve definite gross changes in the fifth lumbar region were noted. These were of a developmental nature nine times and in nine there were definite pathological changes. This paper includes twenty-one case histories with numerous diagrams.

Reconstruction and Plastic Operations on the Hip.

FRED H. ALBEE (*The Journal of the American Medical Association*, October 31, 1925) deals with reconstructive and plastic operations on the hip. He divides the subject up into two groups: (1.) operations which tend to obtain or retain mobility, (2.) those in which arthrodesis of the joint is desired. In dealing with fractures of the neck of the femur the author resorts to bone graft operation in not more than 10%; for the remainder a reconstruction operation is employed. In this operation the hip joint is approached by the Smith-Petersen incision and the head of the femur is removed. With the broad osteotome a section of the lesser trochanter and the shaft is cut longitudinally and prized outwards from the main shaft. The stump of the neck is then rounded so as to produce a minimum amount of irritation on the acetabulum. The leg is then abducted and the upper end of the femur is lifted forward and guided into the acetabulum. The muscles and soft parts should not be separated at all from the severed bone or from the great trochanter. The leg is put up in a long plaster spica in the abducted position. The author also describes a modified technique for cases in which arthrodesis of the hip is desired. He obtains a bone graft from the ilium and places it in contact with the upper end of the acetabulum and with the femur. In joints affected by tuberculosis the author employs two large, strong, tibial grafts to form a bridge above the hip joint. The technique of this operation is described. The author also describes a method of deepening the acetabulum by means of bone graft wedges.

Infantile Paralysis.

G. MURRAY LEVICK (*The Lancet*, August 15, 1925) publishes the results of researches in the treatment of infantile paralysis. The methods of treatment were general radiation of the skin by artificial sunlight, local treatment of affected muscles by rays from long ray lamps passed through red ray filters, electrical treatment, re-education of voluntary stimulus, instrumental support and massage. The conditions selected for treatment were in children whose muscles gave no response to the interrupted galvanic current and in whom the acute attack had taken place many years before. The author describes his reasons for employing the various therapeutic measures and records five cases in which paralysed muscles are described as showing improvement. No attempt was made apparently to test the various methods of treatment, but all patients were treated with all the methods enumerated above. The author lays great stress on the treatment by light, although no record is given of a case treated by light alone.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held in the Medical Society Hall, Albert Street, East Melbourne, on October 7, 1925, Dr. H. DOUGLAS STEPHENS, the Vice-President, in the chair.

Chronic Ulcer of the Leg.

MR. FAY MACLURE O.B.E., read a paper on the treatment of chronic ulcer of the leg, illustrating his remarks with a number of lantern slides (see page 29).

MR. R. HAMILTON RUSSELL in opening the discussion tendered his congratulations to Mr. Maclure on having presented the subject of the treatment of chronic ulcer in an entirely new manner. It had been very instructive to discover how a subject which most of them regarded as uninteresting, could be made attractive when illuminated by a thoughtful and acute mind.

He had regarded himself as knowing as much as most surgeons about chronic ulcer of the leg having frequently been privileged to hear it discussed by Lord Lister who had always taken much interest in the subject, but he felt safe and certain in saying that Mr. Maclure's work in this connexion was to be considered the best that had ever been done. He believed also that the surgical world would recognize the merit of this work.

Mr. Maclure's well considered views of the mechanics of the circulation in the lower limb had been placed before them very lucidly and he looked forward with pleasure to reading the paper when it should be published.

He was not very familiar with the teaching of textbooks of the present day, but it had always been an article of faith with him that when an ulcer completely encircled the leg, treatment other than amputation was useless. He did not know that any surgeon, apart from Mr. Maclure had ever been successful in promoting healing under these circumstances. He would have said that it was almost incredible that an ulcer such as that illustrated in the slide shown by Mr. Maclure could be healed.

Mr. Maclure had gone so much further into the subject than he (Mr. Russell) had ever gone, that he would not attempt to add anything. Surgery was under great obligation to Mr. Maclure for his valuable work in one of its most difficult and dreary departments.

MR. LEO DOYLE said that he spoke as having to deal with many chronic ulcers of the leg in the Out-Patient Department at Saint Vincent's Hospital. Until twelve months previously he followed the routine of rest in bed, fomentations and other measures for the cleansing of the ulcer and skin grafting. The measure of success was but moderate, there being many disappointments. After discussion of the subject with Mr. Maclure he had adopted his methods. Since that time he had seen many varicose ulcers, including two which had encircled the leg, but he had yet to find one which would not heal under the methods demonstrated by Mr. Maclure. Healing of large ulcers was completed as a rule in eight, nine or ten weeks; as yet he had not been successful in reducing the period to six weeks. He found that the patients commonly experienced some discomfort for the first week, but after that time made no complaint. He had used the toy balloon for ulcers behind the malleoli and finding that it answered well had not tried sponge pressure. The means which he employed in general, were exactly those described by Mr. Maclure and he wished to support him in his advocacy of the methods. He felt that he owed Mr. Maclure a debt of gratitude in that he could now approach the treatment of a varicose ulcer confident of cure, whereas he had formerly looked upon it as among the most depressing conditions which he was called upon to treat.

DR. R. R. WETTENHALL said that he wished to associate himself with Mr. Hamilton Russell and Mr. Doyle in their expressions of appreciation of Mr. Maclure's paper. He had the pleasure some twelve months previously of

attending a demonstration by Mr. Maclure on the treatment of chronic ulcer of the leg, the occasion being a clinical meeting of the Branch at the Alfred Hospital. At that time he had been much impressed with the very great advance in treatment which Mr. Maclure's methods represented.

Although the most common type of chronic ulcer of the leg was the varicose ulcer, it was to be remembered that any of a variety of conditions, arterio-sclerosis for instance, might be additional factors in causing chronicity.

For many years he had used X rays in the treatment of varicose ulcer and had obtained very rapid healing, but he had never been able to account altogether satisfactorily for the action of the rays. Mr. Maclure had described the reduction of oedema by external pressure and it was just this effect which was so noticeable a result of exposure to X rays. As a matter of experience the X rays had proved a valuable adjuvant in the treatment of chronic ulcer of the leg.

He wished to inquire of Mr. Maclure whether the application of pressure occasioned the patient much pain. He thoroughly believed in the ambulatory treatment.

He had recently employed ultraviolet light as efficient bactericidally, though only superficially effective. He suggested one or two exposures to ultraviolet light and a quarter of a pastille dose of X rays once a week as accessory to the methods outlined by Mr. Maclure. Varicose ulcers in the early stages indicated by discoloration of the skin, petechiae and scaling, responded well to bandaging and fractional doses of X rays.

MR. BALCOMBE QUICK, O.B.E., said that he wished to join in the expressions of admiration of the close clinical observation and clear thinking which distinguished Mr. Maclure's paper. He was so impressed by the results obtained by Mr. Maclure that he ventured to offer criticism with much diffidence. In one point, however, his experience appeared not to have coincided with that of Mr. Maclure. He found some difficulty in accepting the view that the exudate from the ulcer was due to mechanical factors and was not inflammatory in origin and therefore dependent on harmful processes. He had frequently observed that during the first week of application of the Unna stocking inflammatory processes persisted and were accompanied by discharge which was irritating in character and sometimes led to excoriation of the skin. It then became necessary to remove the stocking after perhaps four or five days. It was his practice to insist on the patient taking three days' rest in bed at the outset of treatment during which time fomentations and wet dressings were applied to the ulcer. He found that when treatment was initiated in this manner the necessity for early removal of the Unna stocking seldom arose. With the single exception of this point he was in complete agreement with Mr. Maclure and he tendered him his thanks for his stimulating paper.

DR. JAMES BOOTH said that the subject of Mr. Maclure's paper had been well chosen in that it was of great interest and importance to general practitioners. He had experienced frequent, but not invariable success with the Unna stocking. He had noted that "Insulin" had been employed lately as an adjuvant in the treatment of varicose ulcer and that extract of the parathyroid gland had been advocated for the relief of pain and the promotion of healing. Had Mr. Maclure any experience of either of these methods of treatment?

With regard to the use of rubber sponges Dr. Booth said that he had on more than one occasion employed sponge pressure for a week, but as no result had been apparent at the end of that time he had desisted. Was he in error in not persisting for a longer period?

MR. D. MURRAY MORTON said that the subject of varicose ulcer had always interested him. When a resident surgeon at the Alfred Hospital he took every opportunity of treating ulceration of the leg and at that time was especially interested in the results to be obtained by Thiersch grafting. Although these were good on the whole, many relapses occurred. As his experience increased he had noted that the big factor for success in treatment was efficient circulation, arterial, venous and especially lymphatic.

He wished to ask Mr. Maclure if he adopted operative measures for the varicose veins in treating varicose ulcer. If pressure were sufficient it would strengthen his belief that the lymphatic circulation was all important.

Ulcers apart from varicose veins, but very similar to varicose ulcers, were commonly seen in out-patient hospital practice. For such he had frequently employed strips of diachylon plaster, applied in such a manner than they enveloped the whole limb as far as a point just proximal to the toes. The strips of plaster were placed directly on to the surface of the ulcer, the dressing being secured in position outside. They were left for four or five days and it had been remarkable to note how the ulcer had improved. He had followed this application with Thiersch grafting, but wondered if the results would not have been better had he persevered with the plaster.

DR. JOHN KELLY said that he wished to join with the preceding speakers in expressing appreciation of Mr. Maclure's excellent paper. He had first seen the method of occlusive dressing with pressure applied to the treatment of varicose ulcers by Nobl in his "Ambulatorium" at the Polyclinik in Vienna. Nobl utilized the rubber sponge largely and applied Unna's stocking over all, without troubling about local antiseptics. Where the method was correctly applied the results were uniformly successful. Rubber elastic stockings were not suitable in the presence of widespread eczema.

After the healing of the ulcers Nobl treated the varicose veins below the knee in selected cases. Injections of five cubic centimetres of sodium carbonate solution of 10% strength were made into the vein from above downwards, the vein being compressed above the site of injection during this procedure and for a short period afterwards. An obliterating thrombo-phlebitis followed.

Some patients with small painful, retro-malleolar ulcers would not tolerate the pressure method. The recalcitrant white ulcers with hard margins might sometimes be really ulceration in the plaques of localized scleroderma. In such plaques ulceration of a most intractable character was prone to occur as a result of slight trauma. Where they were of limited size excision was the best treatment.

DR. J. SANDISON YULE said that he had been called upon to treat many varicose ulcers and had therefore found Mr. Maclure's paper of very great interest. He wished to ask if every varicose ulcer admitted of ambulatory treatment. He had found that in many patients the pain occasioned by the ulcer was too great to admit the application of pressure. It was frequently necessary to advise rest in bed and not always easy to induce the patient to follow the advice. He relied upon rest and the oral administration of antidiathermic serum. He could offer no explanation of the mode of action of the serum, but was satisfied that it was effective in promoting healing of chronic ulcers.

MR. VICTOR HURLEY, C.M.G., said that he wished to add his appreciation to that expressed by other speakers of the interesting and very important paper presented by Mr. Maclure. It would serve to clarify their ideas, particularly with respect to the factors underlying the chronicity of varicose ulcers.

He felt bound to express himself as in agreement with Mr. Quick in his view that many ulcers in their acute and early stages required treatment on antiseptic lines. Very often quite definite inflammatory processes, including lymphangitis and adenitis, were present. It appeared to him that the measures detailed by Mr. Maclure were adapted to the later period when acute inflammation had subsided.

From Mr. Maclure's paper it was apparent that much of the success achieved by him was due to his close personal supervision of the treatment. He also would like to hear an expression of opinion from Mr. Maclure as to the advisability of surgical measures for the eradication of varicose veins. Was it not a fact that in many instances of relapsing ulcer more permanent results were achieved if the veins were removed? Mr. Maclure had explained very lucidly the circulatory conditions in the leg, but the same state of affairs was present in the thigh which also was

encased by a complete covering of fascia. To the circulatory factors must be added that of gravity to account for the invariable situation of ulcers on the leg. In many cases of chronic ulcer radiographic examination showed the existence of chronic osteitis, so that although ulceration did not penetrate beyond the fascia, the deeper tissues were affected by chronic inflammatory changes.

He had found that the application of strips of strapping across the edge and on to the surface of the ulcer often hastened healing. This was perhaps a pressure effect or it might be that the strapping provided a kind of scaffolding for an epithelium, facilitating its growth in a manner similar to that in which the growth of a rose was encouraged by a trellis.

It appeared that in the healing of all tissues a certain amount of pressure or tension acted beneficially. In the suturing of wounds there was a certain optimum tension of the sutures which was most favourable for healing. Also the pressure of the apposed ends of the fragments of a fractured bone against each other probably supplied the stimulus which resulted in new bone being formed at the site of fracture.

DR. R. J. BULL said that Mr. Maclure by his thoughtful, ingenious and suggestive paper had succeeded in breathing new life into the dry bones of the subject of chronic ulcer of the leg.

He was disposed to agree with Mr. Quick that in many instances treatment preliminary to the application of pressure was necessary.

When in London some years previously he had made some inquiries regarding the oxygen treatment for wounds. The majority of the lesions which he had seen so treated, were chronic ulcers, with which was associated very offensive discharge. The first stage of improvement was cessation of odour; this was dependent upon an alteration in the character of the discharge, which formerly foul and dark in colour, became yellow and purulent, the bacterial flora being reduced to staphylococci. In the next stage all discharge ceased and the surface of the ulcer acquired a glazed appearance, which suggested the formation of the resistant membrane described by Mr. Maclure. Having progressed so far the ulcer then healed rapidly.

DR. H. DOUGLAS STEPHENS conveyed the thanks of the meeting to Mr. Maclure. The paper should be helpful in many ways.

Since Mr. Maclure's demonstration at the Alfred Hospital to which reference had already been made by a previous speaker, he had employed pressure in the dressing of small Thiersch grafts and had been very pleased with the results. He had not so far adopted it for large grafts on account of the risk of sepsis, but wished to inquire of Mr. Maclure if he might safely do so.

MR. MACLURE in reply thanked the various speakers for their kind reception of his paper.

Mr. Murray Morton had discussed the relative importance of lymphatic and venous obstruction. Undoubtedly lymphatic obstruction played a very large part in the development and persistence of an ulcer and he considered that in many cases it was the principal factor.

There was a distinct march of events in the development of an ulcer. In the presence of varicose veins or without them there would be pain, swelling, redness and oedema in the affected area. Frequently the skin became scaly and sometimes "wept"—the so-called varicose eczema. These appearances were indications that the circulation had broken down and with stagnation of lymph conditions were favourable for infection. He agreed with Mr. Quick and Mr. Hurley that measures appropriate to acute inflammation should be adopted at this stage, but it was a mistake to continue fomentations after the acute inflammation had been reduced. While in femoral thrombosis the venous obstruction was the prime factor, in those instances of "white leg" in which oedema was not accompanied by dilatation of blood vessels, it appeared that there was occlusion of the main lymphatic vessels in the groin. In such cases ulceration was lymphatic in origin.

With reference to the beneficial effect of X rays and ultraviolet light it was to be remembered that sunlight

also exerted a favourable influence. He would suggest that the exposure resulted in the drying of serum on the surface and thus created a resistant membrane against which the arterial pressure could act. Sunlight, X rays and ultraviolet light thus acted in much the same way as zinc or copper sulphate. He considered that the strips of strapping suggested by Mr. Hurley acted similarly.

Dr. Yule had asked if all ulcers admitted of ambulatory treatment. His reply was in the negative. There must arise many instances in which an infected and painful ulcer demanded rest in bed for a few days. Such rest would make an enormous difference to the ulcer and it would soon reach a stage at which pressure might be applied. From that time it was unnecessary to keep the patient in bed.

The application of pressure often occasioned a certain degree of pain for the first few days and it might be necessary to change the case. The pain was due to the fact that the first application of pressure resulted in the disappearance of fluids from the tissues so that the leg became loose in the case. He agreed with Mr. Quick and Mr. Hurley that it was advisable to change the Unna stocking during the first four or five days, after which as a rule patients found the support very grateful.

In reply to Dr. Booth Mr. MacLure said that he had had no experience of the use of "Insulin" or extract of parathyroid gland. A week was not long enough to obtain results from pressure; at the end of that time pain should have disappeared, but no appreciable degree of healing could be anticipated before the end of the second week.

Mr. Murray Morton and Dr. Stephens had mentioned Thiersch grafts. In connexion with facial surgery and in filling with a whole-skin graft the gap in the forehead which resulted from the removal of the rhinoplastic flap, it had been found necessary to exert considerable pressure in the dressing. The dressing was then not disturbed for eight or ten days, when it was found in the majority of instances that all the graft had "taken." If pressure were omitted the graft sloughed wholly or partially. The resistant skull facilitated the application of pressure, but in other regions of the face where there was no rigid tissue against which pressure could be made, it was difficult to carry out whole skin grafts successfully. Whole skin grafts on a soft bed could be induced to unite by continuous elastic pressure, such as that supplied by dental rubber dam.

He never ligated or otherwise operated upon varicose veins once the ulcer had healed, but exacted a promise from the patient that he would always wear an elastic stocking and renew it when it showed signs of perishing. The effective life of an elastic stocking was about six months.

In conclusion, Mr. MacLure said that he was anxious to express particular appreciation of the kind remarks of his old friend and master, Mr. Hamilton Russell, to whom he owed so much instruction, stimulation and inspiration. He always bore in mind Mr. Russell's teaching that the clinical lessons to be learned from the case in hand were more valuable than those to be drawn from the statistics of the multitude.

A MEETING OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at Saint Vincent's Hospital, Melbourne, on September 2, 1925. Clinical demonstrations were conducted by the members of the honorary staff of the hospital.

Toxic Adenoma.

MR. H. B. DEVINE discussed the case of a female patient who had been affected with a swelling in the neck for twenty years; she was forty-five years of age. Eight months previously she had first experienced a choking sensation and during the interval had complained of flushings, tremblings of the body and repetitions of the feeling of choking. During the previous eight months she had been much troubled by shortness of breath and had suffered particularly from a distressing cough. Irritability and nervous instability had been prominent in the symptoms exhibited by this patient.

There was nothing in her appearance to suggest exophthalmos; it was noted that the teeth were carious.

Physical examination showed that the cardiac apex beat was situated 8.75 centimetres to the left of the mid-line and movement of the whole præcordium during systole was observed. The cardiac dulness on the right side extended to a point 2.5 centimetres from the mid-line of the sternum. A soft systolic bruit was audible in the aortic area and over the carotid arteries, but this could not be detected over the thyroid arteries. The cardiac rhythm was regular, the pulse rate being 120 per minute.

No significant clinical signs could be detected by examination of the lungs. The peculiar hoarse cough which affected the patient was stated by her to have been much worse at the commencement of her illness eight months previously. She was in a very poor state of general nutrition.

Mr. Devine also exhibited microscopical sections of the thyroid gland of another patient. This woman was said to have had an enlarged thyroid always, but during the preceding twelve months the swelling had become conspicuously unilateral and had grown very quickly. Although she had been troubled with diarrhoea, the patient had exhibited no shortness of breath and no nervous symptoms.

The feature of the microscopical section was the very great degree of metaplasia displayed by the constituent cells.

Osteosarcoma.

Mr. Devine also demonstrated from a female patient, aged forty-one years, who when she first came under observation displayed a very large swelling in the region of the left shoulder joint. A portion had been removed for pathological examination which established the tumour as a spindle celled sarcoma. It was considered quite inoperable and intensive deep X ray treatment had therefore been instituted, the first application having been given on July 27, 1922. Further treatment had been carried out in September, 1922, and the swelling had completely subsided. It had been found necessary, however, to expose the shoulder again to deep therapy in July, 1924, since when there had been no development to indicate recurrence.

The original tumour and the progress of recession were well illustrated by a series of skiagrams.

Pathological Specimens.

Mr. Devine exhibited a number of interesting specimens obtained by operative removal. Included among them was a malignant tumour (sarcoma) of the testis. The patient from whom it was removed, had presented a hard, tender swelling in the testicle; it was of interest that he was a syphilitic as indicated by the Wassermann test.

Another specimen was a diverticulum of the sigmoid colon. It had caused acute intestinal obstruction and at the emergency operation for relief of the obstruction it had appeared that the sigmoid loop of the colon was the site of an inoperable malignant growth. Colostomy had therefore been performed, but at a subsequent operation, the diverticulum of the colon which showed much inflammatory thickening had been removed.

Osteitis Deformans (Paget's Disease).

DR. J. NEWMAN MORRIS presented a male patient, aged sixty years, in whom the conspicuous clinical features of osseous overgrowth of the distal half of the tibia on the right side, bowing of the tibia and enlargement of the internal condyle of the left humerus were present.

The patient had first noticed the swelling in the right leg six months previously, but for twelve months he had been aware of some soreness about the ankle and had attributed it to a sprain. The swelling was increasing in size. Pain became aggravated at night and there was tenderness over the lateral and medial aspects of the upper portion of the swelling.

It had been ascertained that the patient's right leg had been injured by a fall of stones twelve years previously,

but there had apparently been no fracture. No history of other injury or illness could be obtained.

There was some œdema over the hard, tender swelling in the distal half of the tibia; the bowing of the bone was said to have been present for thirty years. The left internal condyle was enlarged and there appeared to be a slight degree of lateral bending of the leg. No abnormalities could be detected about the bones of the skull and spine and the patient's blood serum had failed to give a reaction for syphilis to the Wassermann test.

A skiagram was exhibited which showed calcification in the soft tissues; this was not regarded as resembling a periosteal sarcoma, but it was considered that it might indicate the presence of calcified clot in the veins. The question of syphilitic periostitis had also to be considered.

Acromial Bursitis.

Dr. Morris's second patient was a man in whom subacute bursitis had led to calcareous deposition in the acromial bursa of both sides. The pathological deposit was well seen in the skiagrams exhibited.

Fractures of the Humerus.

Dr. Morris demonstrated the use of abduction splints in the treatment of fractures of the humerus and showed a number of patients in whom injury of this nature had been treated.

Hodgkin's Disease.

MR. C. GORDON SHAW discussed the case of a man, aged fifty years, from the aspect of diagnosis. When he first came under observation the patient had complained of pain of indefinite character and location in the left side. He stated that he had been thus affected for three months.

Clinical examination disclosed the presence of enlarged glands in the neck, axillæ and inguinal regions; the glands in their general character were suggestive of those of Hodgkin's disease. By examination of the blood it had been determined that the red cell count was 6,500,000 per cubic millimetre and that the white cells numbered 22,000 per cubic millimetre. Hæmoglobin was estimated as 105%. Features of the differential count of leucocytes were that the polymorphonuclear neutrophile cells were reduced to 12%; endothelial leucocytes were present in as high a proportion as 21% and there was no increase in the proportion of eosinophile polymorphonuclear cells. The findings in the differential leucocyte count had been regarded as suggestive of Hodgkin's disease.

Following a reaction on the part of the blood to the Wassermann test a course of intravenous injections of "Novarsenobillon" had been instituted. The patient had to date received five injections and there had been very noticeable recession in the size of the glands which were just palpable.

Tuberculous Spinal Caries.

Mr. Shaw demonstrated the jacket which had been applied in the treatment of tuberculous spinal caries in a boy, aged fifteen years. The only symptom of which he had ever made complaint was pain in the back. On clinical examination slight prominence of the spines of the ninth and tenth dorsal vertebrae was apparent, although the movements of the spinal column were good. A skiagram disclosed absorption of the intervertebral disc between the ninth and tenth dorsal vertebrae.

The plaster jacket demonstrated maintained a secure grip of the pelvis and shoulders. It was proposed to keep the boy in the casing on his back for three months and at the end of that time to remove the plaster for a further X ray examination. If after a general review the progress was deemed to be satisfactory, the boy would be required to wear the jacket for a further three months during which he might be allowed to walk about.

Arthrodesis.

Mr. Shaw also showed a young woman, aged nineteen years, whom he had treated for a flail ankle joint, the

sequela of poliomyelitis in childhood. He had performed arthrodesis of the ankle joint on the left side, but had not interfered with the mid-tarsal and astragalo-calcaneal joints. The ankle joint was now firm and the foot fixed at right angles to the tibia. The patient could walk very satisfactorily.

Tuberculous Bone Disease.

Mr. Shaw showed two patients in whom were seen the late results of treatment of tuberculous disease of bone.

In the first the lesion had been tuberculosis of the talus, the portion of the bone affected being situated lateral to the navicular bone and to the lower extremity of the tibia. The diagnosis had been confirmed by radiographic examination and at one stage there had been a sinus on the medial aspect of the foot.

Mr. Shaw demonstrated the range of movement at the ankle and mid-tarsal joints and remarked that the outcome of tuberculosis was not necessarily ankylosis. In the present instance the patient had a good functioning joint capable of a fair range of movement.

The second patient was a girl who had been affected by tuberculous disease of the crest of the right iliac bone. Operation had been necessary for the removal of a sequestrum, the abscess cavity had been cleared out and subsequently filled with bismuth-iodoform and paraffin paste ("Bipp"). The scar was completely healed and there was no limitation of the movements of the hip joint.

Tuberculous Elbow Joint.

MR. H. BUSH showed a young woman who had first come under his observation in April, 1925, with impairment of function of the elbow joint which on clinical and radiological grounds was considered to be of tuberculous origin. The duration of the trouble was stated as five weeks, but in the opinion of Mr. Bush it was probably longer. The position had been bad, the joint having become fixed in such a position that the forearm was in full pronation and flexed on the upper arm at an angle of 120°. By a combined process of fixation and rotative traction a very much improved position had been gained and the patient was capable of a degree of pronation and supination which rendered the limb of much greater service to her than formerly.

Goitre.

DR. S. PERN discussed the clinical features of a girl, aged twelve years, who had had goitre for ten years. She was also the subject of mitral incompetence. Infected tonsils had been removed, but the girl required treatment for sinusitis. Improvement in the sinusitis had been effected and the recession which the thyroid was undergoing, was to be attributed to this fact and to the use of Lugol's solution. The girl was gaining weight, having advanced 2.7 kilograms in five months.

Multiple Arthritis.

Another patient shown by Dr. Pern was a boy, aged five and a half years, who had been the subject of arthritis affecting the left elbow joint, left knee and left shoulder joints for eighteen months. At one stage pus had been aspirated from the elbow joint, but fluid obtained from the knee joint was clear. A radiogram had shown the presence of small bony sequestra in the elbow joint and some periosteal thickening. Tonsillectomy had been performed one month previously. He was awaiting a pathological report on a specimen of fluid removed from the knee joint.

Exophthalmic Goitre.

In the third instance Dr. Pern showed a female patient, aged fifty-two years, who had undergone operation by Mr. T. P. Dunhill nine years previously for exophthalmic goitre. She had had altogether six operations, the last of which had been performed in February, 1925, but the goitre continued to grow. The patient had exhibited much pigmentation of the skin, but this was now clearing. Examination revealed the presence of sinusitis and a yellow

post-nasal discharge, which was rapidly diminishing. The goitre was subsiding under the influence of Lugol's solution.

Dextrocardia.

DR. W. J. NEWING demonstrated the physical signs in a man, aged twenty-six years, who was subject to periodical attacks of partial pneumothorax during which the position of the cardiac apex beat had been observed to move to the right. It was located in the sixth intercostal space 2.5 centimetres to the right of the mid-line of the sternum. The patient stated that he had suffered much from eczema when young and that after the eczema ceased to trouble him he had developed asthma. He was subject to frequent attacks of asthma. An examination of the sputum had failed to detect any tubercle bacilli and the blood serum did not react to the Wassermann test.

By radiographic examination it had been ascertained that both lungs were affected by dense fibrosis.

Mitral Stenosis: Splenomegaly.

DR. J. W. GRIEVE presented for discussion a young woman, aged nineteen years, in whom mitral stenosis was associated with a definite enlargement of the spleen. She was said to have suffered from infantile paralysis and "a bad heart" at the age of twelve months and for the previous few years had attended Saint Vincent's Hospital for headaches, attacks of abdominal pain and erythematous rash on the legs. She was the sixth of seven children and her family history was good.

Examination of the blood showed the presence of anæmia of moderate degree and non-distinctive character; the leucocytes numbered 15,000 per cubic millimetre, no special features being disclosed by the differential count. An indirect reaction had been obtained by the Van den Bergh test. The serum had not reacted to the Wassermann test. The temperature oscillated between 37.3° C. and 37.6° C.

Peripheral Neuritis.

Another patient discussed by Dr. Grieve was a man, aged forty-seven years, whom he regarded as the subject of peripheral neuritis and possibly Wernicke's disease. He had made complaint of coldness and numbness of both feet and severe shooting pains in both lower extremities. The onset of these symptoms dated from seven weeks previously. After a few days paralysis of both lower limbs had supervened, accompanied by weakness short of paralysis in the upper limbs. The paresis of the arms had been noted in the right before the left arm. Shortly afterwards paralysis of the left side of the face had developed and at the same time the patient had complained of diplopia. He admitted that he had been addicted to alcoholic excess for the previous twenty years. In the neurological examination were noted diplopia, nystagmoid movements on looking to the left, left-sided facial paresis of peripheral type. In the upper limbs paresis affected especially the extensor groups of muscles and muscular wasting was evident. Sensory changes could not be demonstrated and no response could be obtained in the attempt to elicit the deep tendon reflexes. The features in the lower limbs were paralysis, muscular wasting, pain on passive movement and suppression of the deep tendon reflex. Sensory changes could not be unequivocally demonstrated. There was general weakness in the trunk musculature. Tremors and muscular incoordination had not been observed. The Wassermann test applied to the blood serum did not furnish any evidence of syphilis.

Friedreich's Disease.

DR. G. P. O'DAY presented a girl, aged nineteen years, who exhibited the characteristic foot deformity of Friedreich's disease. On examination the quadriceps tendon reflexes could not be elicited and the plantar reflexes were found to be extensor in character on both sides. There appeared to be no muscular wasting, the electrical reactions of the muscles were normal and the patient exhibited no nystagmus or articular defect. Her father and her uncle were both subjects of congenital club foot; in her case the deformity had developed within the preceding few months.

Raynaud's Disease.

An example of Raynaud's disease was provided by a man, aged thirty-seven years. He had lost all his toes, but the upper extremities were not affected. Ulcers on the right foot, formerly sloughing, had become clean and were healing in painless manner under the influence of ultraviolet light.

Scleroderma.

DR. O'DAY's third patient was a woman, aged thirty-five years, whose face and legs had been swollen for the preceding six months. Clinical examination showed the existence of a condition of generalized scleroderma, small patches of leucoderma appearing opposite the last dorsal spine. The thyroid gland was enlarged, but treatment by means of thyroid extract had been ineffective. It was proposed to irradiate the skin with ultraviolet rays.

Procidencia Uteri: Operation: Septicæmia.

DR. A. NORMAN McARTHUR detailed the case record of a woman, aged thirty-four years, who was admitted to Saint Vincent's Hospital on June 16, 1925, for operation for complete prolapse of the uterus. Associated with the prolapse was the usual oedema of the vaginal wall. An operation had been performed two days after the patient's admission and the next day the temperature had begun to rise. It had remained high for seven weeks, the chart being of the "Matterhorn" type. An examination of the urine carried out on June 29, 1925, had revealed the presence of numerous pus cells and Gram-positive cocci. The examination had been repeated on July 18, 1925, when the findings had been confirmed and *Staphylococcus aureus* cultivated. An autogenous vaccine of this organism had been prepared and administered for a fortnight. The patient's blood had been examined for the presence of agglutinins against *Bacillus typhosus*, *Bacillus paratyphosus A* and *Bacillus paratyphosus B*, but no reaction could be obtained with the serum in such low dilution as one in twenty. The patient had become very weak and emaciated, had been subject to repeated severe rigors and in view of the fact that extensive pneumonic signs were present in the right lung the prognosis had appeared extremely bad. At this stage a blood culture had been successful in the recovery of a hæmolytic streptococcus. Thirty cubic centimetres of anti-streptococcal serum (Commonwealth) had been promptly administered and the injection had been followed by severe reaction in the form of joint and limb pains and intense headache. Although the prognosis had seemed so very grave, within two days of the injection of the serum the patient's temperature had become normal; it had remained so and she had made a rapid recovery.

In commenting upon the course of the illness in this patient Dr. McArthur said that it indicated that it was unwise to operate immediately for *procidencia uteri*. As a preliminary to operation the uterus should be replaced, the patient kept in bed and treated by the insertion of lamb's wool pledgets soaked in glycerine and boric acid within the vagina. Two other conclusions to be drawn were that bacteriological examination of the blood should not be left too late and that antistreptococcal serum should be administered even after some weeks of infection.

Myomectomy During Pregnancy.

DR. THOMAS MURPHY showed specimens of four fibroid tumours which he had removed by myomectomy at the end of the fourth month of pregnancy. The operation had been undertaken on account of severe pain. Pregnancy was proceeding.

Deformity of Fauces.

DR. J. M. BAXTER demonstrated adhesion of the posterior pillar of the fauces and part of the soft palate to the pharyngeal wall in a boy, aged sixteen years. He complained of an offensive smell in the nose and exhibited symptoms of nasal obstruction. He had undergone an operation for the removal of tonsils and adenoids eight years previously.

Nasal Obstruction.

Another boy shown by Dr. Baxter first attended Saint Vincent's Hospital about ten months previously on account of nasal obstruction on the right side. This was said to have followed a blow from a cricket ball. The right nasal passage had been found filled with a highly vascular polypoid growth; this had been removed, only to recur. Another removal had been attempted and the pathological report on the specimen on this occasion was one of fibrifying sarcoma. The boy's right eye had become blind about five months previously. Deep therapy had been of no avail in treatment.

Papilloma of the Larynx.

In Dr. Baxter's third patient laryngo-fissure for the removal of a papilloma had been performed fourteen years previously. The operation had been followed by aphonia which persisted for eleven years. A return of the papilloma had necessitated a further tracheotomy and laryngo-fissure three years previously. About three months after the operation the voice had gradually returned.

Slit Lamp and Corneal Microscope.

Dr. J. F. SPRING demonstrated the use of the Gullstrand slit lamp and corneal microscope. The various pathological conditions well shown by means of the apparatus included corneal vessels in interstitial keratitis of old standing, vascularization in disciform keratitis and embryonic remains in the vitreous. Dr. Spring also demonstrated vitreous structure.

Dermatological Conditions.

On behalf of DR. HERMAN LAWRENCE, DR. KEITH COLQUHOUN demonstrated the lesions of *erythema induratum* as they occurred in three young women. The condition simulated Bazin's disease, but was of different nature; diffuse thickening and induration of the skin and subcutaneous tissue resulted, but nodules and ulcers did not appear.

A female patient provided an instance of rhinophyma. She had been shown at a clinical meeting two years previously; radium treatment in the interval had effected much improvement.

A verrucous syphilide was seen in another female patient; unlike those of syphilis generally the lesions were very irritable. The patient's blood serum reacted very strongly to the Wassermann test.

Correspondence.

INDICATIONS FOR INTERFERENCE DURING PREGNANCY.

SIR: Replying to Dr. E. S. Meyers of November 24:

Test of Labour.—This term means that the pains have continued regularly until the os is three-quarters to fully dilated. No test of labour is complete, however, without two to three hours' pains after rupture of the membranes. The indications that the test has gone on long enough are ascertained by the condition and dilatation of the cervix and the bulging of the membranes. If, after the pains have been well established and continuing regularly, it is found that the cervix has been taken up, the os dilating and the membranes not bulging abnormally, there is a good chance of spontaneous delivery. If, however, the membranes are found to be bulging into the vagina and the cervix not taken up, the chances of pelvic delivery are not good and section should be done.

In cases when the membranes rupture early and the cervix is still present with dilatation up to one-half, difficulty will always be met with in delivery. In these cases the head is too large to act as a dilating power and Cæsarean section is indicated.

If after the membranes have been ruptured for two to three hours it is found that the cervix is not dilating and also instead of "crowning" the head it remains well defined in the vagina, the indications then are that labour should not proceed further.

The manner in which the cervix conducts itself is all important in determining whether the test has gone on long enough. If the cervix closely applies itself to the head the latter after moulding can act as a dilating agent and labour can be allowed to proceed. If, however, the cervix remains a vaginal portion, the head is too large for the brim and cannot come down to continue the dilatation. Forceps should not be applied in these cases as damage must result.

Pre-Eclamptic Albuminuria.—(1) I have invariably found that in all cases treated as described the albumin clears up within three or four weeks *post partum*. Should it persist longer, the kidney itself is probably at fault. Any cases that show improvement under treatment are always allowed to go on.

(2) It would take considerable time to compile the exact figures from the records of cases in which induction has been done, but I can assure Dr. Meyers that the fœtus has a much better chance of living by inducing in cases which do not respond to treatment, than it has by continuing the expectant treatment. By delaying the induction too long in the hope of reaching nearer to term is to run the risk of intrauterine fœtal death.

Yours, etc.,

R. N. WAWN.

56, Collins Street, Melbourne,
December 19, 1925.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

THE undermentioned have been registered under the provisions of *The Medical Act, 1912 and 1915*, as duly qualified medical practitioners:

Cook, Cyril Edmund, M.B., B.S., 1922 (Univ. Melbourne), Kempsey.
Gregg, Ashton Ewan, M.B., 1925 (Univ. Sydney), Primus Street, Roseville.
Harbison, Noel Sinclair, M.B., B.S., 1925 (Univ. Melbourne), Bowral.
McKeon, Michael Leonard Devaney, M.B., Ch.M., 1925 (Univ. Sydney), Bundaberg, Queensland.
Nicholl, Frederick Livingstone, M.B., Ch.M., 1925 (Univ. Sydney), Griffith Street, Manly.
Walker, Dallas Bradlaugh, M.B., Ch.B., 1919 (Univ. N.Z.), F.R.C.S., 1919 (Edinburgh), F.R.C.S., 1923 (England), 170, Phillip Street, Sydney.

Registration of Additional Qualification.

Bennett, Aubrey George, Ch.M., 1925 (Univ. Sydney).

NEW YEAR'S HONOURS.

THE medical profession has received little recognition at the beginning of the year 1926. Sir Robert Armstrong Jones, C.B.E., F.R.C.S., F.R.C.P., has been created a baronet in recognition of his work in orthopaedic surgery.

His Majesty has created Professor Mungo William MacCallum a Knight Commander of the Most Honourable Order of Saint Michael and Saint George. Professor Sir Mungo MacCallum's services as Vice-Chancellor of the University of Sydney and as Emeritus Professor of English are well known. We extend the hearty congratulations of the medical profession to him.

Obituary.

GEORGE READ.

We regret to announce the death of Dr. George Read, of Roseville, New South Wales, which occurred at Randwick on December 26, 1925.

THE MEDICAL JOURNAL OF AUSTRALIA.

We are indebted to several members for copies of THE MEDICAL JOURNAL OF AUSTRALIA of December 5, 1925, in response to our request. We would ask those who have not appended their names to accept this expression of thanks.

JOHN IRVINE HUNTER MEMORIAL FUND.

The following additional subscriptions to the John Irvine Hunter Memorial Fund have been received:

	£	s.	d.
Previously acknowledged	1,806	16	3
Dr. S. Gillies	50	0	0
Dr. G. H. Burnell	5	6	0
Dr. F. A. Pockley	5	5	0
Dr. R. B. Wade	5	5	0
Dr. G. T. Ferris	3	3	0
Dr. A. T. H. Nisbet	2	2	0
Dr. E. Danziger	1	2	0
Miss E. M. Spencer	1	1	0
Dr. C. J. B. Armstrong	1	1	0
W. E. R. Burchart	1	1	0
Dr. J. B. Cribb	1	1	0
Dr. W. L. Nickson	1	1	0
Dr. S. Pern	1	1	0
	£1,885	5	3

Medical Appointments.

Dr. George Gray Nicholls has been appointed Acting Government Medical Officer, Department of Chief Secretary, Victoria.

Dr. F. N. LeMessurier (B.M.A.) has been appointed a member of the State Children's Council, South Australia.

Dr. Keith Rennick Speeding (B.M.A.) and Dr. Melville Ernest Chinner have been appointed Resident Medical Officers at the Adelaide Hospital, South Australia.

Dr. Charles Victor Watson Brown (B.M.A.) has been appointed Acting Government Medical Officer at Longreach, Queensland.

Dr. T. S. Pearse has been appointed District Medical Officer and Public Vaccinator at Southern Cross, Western Australia.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xviii.

ADELAIDE HOSPITAL: Honorary Assistant Physician (Consumptive Home).

ROYAL AUSTRALIAN AIR FORCE: Medical Officers, Citizen Air Force—One in Sydney, One in Melbourne.

SYDNEY HOSPITAL: Honorary Relieving Assistant Ophthalmic Surgeon.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C. 1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary B.M.A. Building, Adelaide Street, Brisbane.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Ceduna, Wudinna (Central Eyre's Peninsula), Murat Bay and other West Coast of South Australia Districts.
WESTERN AUSTRALIAN: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

- JAN. 12.—New South Wales Branch, B.M.A.: Ethics Committee.
 JAN. 14.—Victorian Branch, B.M.A.: Council.
 JAN. 18.—New South Wales Branch, B.M.A.: Organization and Science Committee.
 JAN. 19.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
 JAN. 26.—New South Wales Branch, B.M.A.: Medical Politics Committee.
 JAN. 27.—Victorian Branch, B.M.A.: Council.
 FEB. 3.—Federal Committee of the British Medical Association in Australia: Meeting at Melbourne.
 FEB. 3.—Victorian Branch, B.M.A.: Presentation of Balance Sheet, 1925.
 FEB. 4.—South Australian Branch, B.M.A.: Council.
 FEB. 9.—New South Wales Branch, B.M.A.: Ethics Committee.
 FEB. 11.—Victorian Branch, B.M.A.: Council.
 FEB. 16.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
 FEB. 24.—Victorian Branch, B.M.A.: Council.
 FEB. 25.—South Australian Branch, B.M.A.: Scientific Meeting.
 MAR. 3.—Victorian Branch, B.M.A.: Branch.
 MAR. 4.—South Australian Branch, B.M.A.: Council.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, Sydney. (Telephones: MW 2651-2.)
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